UNIVERSITY OF CALIFORNIA
MEDICAL CENTER LIBRARY
SAN FRANCISCO

EX LIBRIS

Digitized by the Internet Archive
in 2016 with funding from
The National Endowment for the Humanities and the Arcadia Fund

https://archive.org/details/minnesotamedicin36unse_0

MINNESOTA MEDICINE

Journal of the Minnesota State ical Association, Southern Minnesota Medical Association,
Northern Minnesota M al Association, Minnesota Academy of Medicine, and
inneapolis Surgical Society

Owned and Published by
THE MIN SOTA STATE MEDICAL ASSOCIATION
Under the Direction of Its

EDI NG AND PUBLISHING COMMITTEE

E. M. Hammes, M.D St. Paul
Philip F. Donohue, D., St. Paul
L. M. Eaton, M.D., hester
J. J. Heimark, M.D airmont
Henry J. Moehring, D., Duluth

C. L. Oppegaard, M.D., Crookston
T. A. Peppard, M.D., Minneapolis
H. A. Roust, M.D., Montevideo
Henry L. Ulrich, M.D., Minneapolis
A. H. Wells, M.D., Duluth

EDITOR
Carl Drake, M.D., Saint Paul/Arthur H. Wells, M.D., Duluth

ASSOCIATE EDITORS
George Earl, M.D., Saint Paul
Henry L. Ulrich, M.D., Minneapolis

VOLUME 36

JANUARY-DECEMBER, 1953

EDITORIAL AND BUSINESS OFFICES
2642 University Avenue - - - - - - - - - - - Saint Paul 14, Minn.

BUSINESS MANAGER
J. R. Bruce / R. R. Rosell

Copyrighted 1953, by the
MINNESOTA STATE MEDICAL ASSOCIATION

Index to Volume 36

A

Abdomen, A study of masses in the right lower quadrant of the, 481
Accidents—chief killer of children, 1141
Acidosis, ammonium chloride, Danger of, 133
Acute cervical tumor in a mentally deficient child, An, 1253
Aged, The responsibility of the practicing physician and health department in the care of the, 137
Alexander, H. A.: Injection therapy of varicose veins using sylnasol foam, 1249
Allen, William, Storey, Emerson W., and Rosenfield, A. B.: Accidents—chief killer of children, 1141.
Allergic reaction to para-aminosalicylic acid, 850
Allergy, Dermo-fungous, 602
Ammonium chloride acidosis, Danger of, 133
Analysis of tuberculosis case registers in Minnesota, 486
Anemia, Hemolytic, 128
Anemia, Treatment of, 40
Aneurysm of the aorta, Dissecting, with neurological complications (case report), 625
Ankle, Occult dislocation of the, 1135
Antibiotic therapy, Fatal enterotoxic reactions caused by, 63
Antibiotic therapy in bacterial endocarditis, 466
Aorta, Dissecting aneurysm of the, with neurological complications (case report), 625
Approach toward the ideal in parenteral nutrition, An, 221
Arterial embolism, peripheral, The diagnosis and management of, 230
Aspiration biopsy of bone marrow, 961
Atelectasis in the newborn, Surgical approach to, 172
Auricular arrhythmias, Quinidine intoxication occurring during therapy of, 1052

B

Babb, Frank S.: The timing of fracture treatment, 1138
Bacterial endocarditis, Antibiotic therapy in, 466
Baker, A. B., Schiele, B. C., Hastings, D. W., and Jensen, R. A.: Neurologic and psychiatric trends in Minnesota, 384
Balfour, Donald C.: One hundred years of surgical progress, 356
Bargen, J. Arnold, and Mortensen, J. D.: A study of masses in the right lower quadrant of the abdomen, 481
Barr, Robert N.: The responsibility of the practicing physician and health department in the care of the aged, 137
Bauer, Henry: Laboratory aids in the diagnosis of viral and rickettsial diseases, 1257
Becker County blood bank, 1241
Bell, E. T.: The future of the medical school of the University of Minnesota, 589
Bell, Joseph C.: Problems in the roentgen diagnosis of bleeding lesions of the upper gastrointestinal tract, 917
Benjamin, Edwin G., Greenberg, Albert J., and Leemhuis, Andrew J.: Dissecting aneurysm of the aorta with neurological complications (case report), 625
Berglund, E., Eder, W. P., Wyatt, O. S., and Chisholm, T. C.: Surgical approach to atelectasis in the newborn, 172
Berkwitz, N. J., and Kram, Charles: Patients' impressions of a community mental health center, 591
Berman, Reuben, Sadoff, Charles M., and Gordon, George B.: Quinidine intoxication occurring during therapy of auricular arrhythmias, 1052
Biliary tract, extrahepatic Humoral vs. neural regulation of the, 720
Blackmun, Harry A.: The physician and his estate, 1033
Blanshard, T. Paul: Herpes zoster with motor paralysis, 152
Blood bank, Becker County, 1241
Blood banking in smaller Minnesota communities, 736
Blood, Newer concepts on the coagulation of the, 726
Blood pressure, Spinal injection of blood to lower, in essential hypertensive patients (case report), 738
Boies, Lawrence R.: Modern otolaryngology as a specialty, 368
Bone marrow, Aspiration biopsy of, 961
Boyden, Edward A.: Humoral vs. neural regulation of the extrahepatic biliary tract, 720
Braasch, William F.: A hundred years of progress in the therapy of urinary infection, 378
Braceland, Francis J.: Psychiatry and religion, 711
Breast, cancer of the, Extended or super-radical mastectomy for, 763
Briggs, John F.: Rupture of the interventricular septum secondary to myocardial infarction, 1149
Briggs, John F., and Konig, Theodore: Hereditary hemorrhagic telangiectasis, 1154
British health plan, Inside the, 125
Brucellosis in man, 460
Bruhl, Heinz H.: An acute cervical tumor in a mentally deficient child, 1253
Burnham, Wesley, H.: Hand and finger fractures, 1129
Bursitis of the knee and elbow, posttraumatic, The use of hydrocortisone acetate (compound F acetate) in the treatment of, 142

Book Reviews

Ackerman, Lauren V.: Surgical pathology, 1297
American Diabetes Association: Diabetes guide book for physicians, 92
Cheney, Garnett: Medical management of gastrointestinal disorders, 428
Dieckmann, William J., et al: The toxemias of pregnancy, 788
Gordon, Richard: Doctor in the house, 564
Hansel, French K.: Allergy in relation to otolaryngology, 668
Hansel, French K.: Clinical allergy, 426
Harofe Haivri, 495
Horsley, Guy W., and Bigger, Isaac A.: Operative surgery, 1298
Hughes, William F.: Office management of ocular diseases, 426
Johnson, Julian, and Kirby, Charles K.: Surgery of the chest, 91
Jordan, Philip D.: The people's health; a history of public health in Minnesota to 1948, 1298
Krajian, Aram A., and Gradwohl, R. B. H.: Histopathological technic, 284
McManus, J. F. A. (editor): Progress in fundamental medicine, 892
Medical school faculty publications, 495
Moseley, H. F.: Textbook of surgery, 428
National League for Nursing: Schools of nursing in the United States, 91
New York Heart Association (Harold E. B. Pardee, chairman): Nomenclature and criteria for diagnosis of the heart and blood vessels, 788
Pascal, Joseph I.: Studies in visual optics, 892
Pugh, David G.: Roentgenologic diagnosis of diseases of bones, 667
Rivers, Thomas M. (editor): Viral and rickettsial infections of man, 787
Rosenbaum, Francis F.: Clinical electrocardiography, 563

92140

Roth, Grace M.: Tobacco and the cardiovascular system: The effects of smoking and of nicotine on normal persons, 1101
Rubos, Rene J. (editor): Bacterial and mycotic infections of man, 787
Scobee, Richard G.: The oculorotory muscles, 563
Selye, Hans: The story of the adaptation syndrome, 283
Selye, Hans, and Horava, Alexander: Second annual report on stress, 427
Sharpe, William: Brain surgeon, 667
Stewart, Harold J.: Cardiac therapy, 789
Sulzberger, Marion B., and Wolf, Jack: Dermatology; essentials of diagnosis and treatment, 284
Waksman, Selman A. (compiler): The literature on streptomycin, 197

C

Callahan, Francis F.: The present status of tuberculosis in Minnesota, 33
Cancer of the breast, Extended or super-radical mastectomy for, 763
Cancer of the tongue, 828
Cancer, Tests for, 623
Carcinoma of cardiac end of stomach and esophagus, 170
Caylor, Harold D.: Immediate cholangiography in surgery, 761
Century of medicine, A, 349
Cervical cytology, Practical considerations in, 1065
Cesarean section complicated by cholelethiasis, 1067
Chalgren, William S.: Physical symptoms of depression, 148
Changing treatment of pulmonary tuberculosis, The, 29
Chatterton, Carl C.: Early orthopedic surgery in Minnesota, 360
Chesley, Albert J., and Wilson, Netta: Eighty years of public health, 337
Chest, Management of patients with trauma of the, 247
Chest radiography, routine, Some personal observations on the use of, 701
Chest roentgenograms, abnormal, A histoplasmin and tuberculin study of psychiatric patients having, 235
Children, Accidents—chief killer of, 1141
Chisholm, T. C., Berglund, E., Eder, W. P., and Wyatt, O. S.: Surgical approach to atelectasis in the newborn, 172
Cholangiography, Immediate, in surgery, 761
Cholecystectomy, Indications and precautions in, 714
Cholelithiasis, Cesarean section complicated by, 1067
Chronic pharyngeal and laryngeal histoplasmosis successfully treated with ethyl vanillate, 249
Civil defense: a report to the membership, 457
Cleido-cranial dysostosis, 1152
Clinical determination of hemoglobin, 255
Clinical diagnosis of some bullous dermatoses, The, 598
Cole, Warren H.: Indications and precautions in cholecystectomy, 714
Common ocular manifestations of diabetes mellitus, 45
Cook, Edward N.: Infections of the urinary tract, 605
Coronary insufficiency, 57
Correa, Dale: The thyrotoxic heart, 759
Cortisone, A reminiscence of certain events before, during and after the discovery of, 705
Country newspaperman wants more "horse and buggy" doctors, A, 1039
Cysts of the liver, Solitary nonparasitic, 831
Cytology, cervical, Practical considerations in, 1065

Communications

Stone, Allan (cancer monographs), 184

D

Dahlin, David C.: Practical considerations in cervical cytology, 1065
Dahlstet, John P.: Friedlander's pneumonia, 135
Danger of ammonium chloride acidosis, 133
Defense, Civil: a report to the membership, 457
Depression, Physical symptoms of, 148
Dermatitis from industrial oils and chromates, 55
Dermatology in the first century of medicine in Minnesota, 375
Dermatoses, bullous, The clinical diagnosis of some, 598
Dermo-fungous allergy, 602
Diabetes mellitus, Common ocular manifestations of, 45
Diagnosis and management of peripheral arterial embolism, The, 230
Diagnosis and treatment of postpoliomyelitic contractures, 824
Diehl, Harold S.: Medical schools and medical education over the past century, 332
Dislocation, Occult, of the ankle, 1135
Dissecting aneurysm of the aorta with neurological complications (case report), 625
Disturbances of the thyroid other than hyperthyroidism, 60
Dockerty, Malcolm B.: Rapid frozen sections—their value in diagnosis, 387
Doctor as a medical witness, The, 1036
Dorsey, John M.: Massive upper gastrointestinal hemorrhage, 921
Drake, Carl B.: Medical journalism in Minnesota, 344
Drake, Carl B.: Social security for physicians, 1238
Dynamics of emotions, The, 1232
Dysostosis, Cleido-cranial, 1152

The Dean's Page

Child psychiatry, 1080
Dean's page, The, 640
Department of pathology, The, 1265
Medical school—its objectives and organization, The, 754
Policies relating to admission of medical students, 976
University Hospitals admission policy, 861
University of Minnesota School of Nursing, 1167

E

Early orthopedic surgery in Minnesota, 360
Eckman, Ralph J., Kragh, Lyle V., Joffe, Harold H., and Wells, Arthur H.: Obscure fever of hypernephroma, 488
Eder, W. P., Wyatt, O. S., Chisholm, T. C., and Berglund, E.: Surgical approach to atelectasis in the newborn, 172
Eighty years of public health, 337
Embolism, peripheral arterial, The diagnosis and management of, 230
Emotions, The dynamics of, 1232
Endocarditis, bacterial, Antibiotic therapy in, 466
Estate, The physician and his, 1033
Evaluation of female sterility, 938
Extended or super-radical mastectomy for cancer of the breast, 763
Extrapulmonary intrathoracic tumors, 953
Eye, Red sore, emergency care, 1046

Editorial

Adolescence of virology, The 1263
American Federation of Medical Centers, 493
American Geriatrics Society, 971
American Medical Educational Fund drive, 391
Blood donation still needed, 972
Cancer warnings not overdone, 860
Chemotherapy in tuberculosis, 494
Clinician vs. the specialist, The, 1077
Dean's page, The, 638
Disciplining a discipline, 1263
Distribution of gamma globulin, 495

Dublin, Dr., retires, 160
Effect of TV crime programs on children, 66
False propaganda, 392
Gamma globulin in polio, 158
Geriatrics—medical opportunity, 1165
Increasing percentage of bacterial-resistant strains to antibiotics, The, 751
Influenza and pneumonia, 637
Keefer, Doctor, appointed special assistant to Oveta Culp Hobby, 972
Kenny, Sister Elizabeth, 67
Medical education a la carte, 1264
Medical licensure statistics for 1952, 859
Medical school and medical practice, The, 65
Minnesota's needs in the fight against tuberculosis, 65
Nalline® and Tensilon®, 1078
New commission on accreditation of hospitals, 66
New editor and business manager, 859
New editor speaks, The, 970
Panel practice, 158
Physicians' assistance fund, 970
Polio culture, 493
President's commission on health needs of the nation, 259
Public relations and the medical profession, 159
Reaction to reaction, 1166
Reorganization, with reservations, 390
St. Joseph's Hospital centennial, 258
State Association centennial, The, 258
State Medical Association centenary, 390
State meeting, The, 636
Tuberculosis in Minnesota, 1166
Vice versa (The specialist answers the clinician), 1078
"Watch it, Doc," 752
World Medical Association, 638

F

Facts and fallacies in therapy, 1234
Fatal enterotoxic reactions caused by antibiotic therapy, 63
Female sterility, Evaluation of, 939
Femoral shaft, fractures of the, The use of the Kuntscher nail for, 837
Fever, Obscure, of hypernephroma, 488
Finger fractures, Hand and, 1129
Fleming, D. S.: Analysis of tuberculosis case registers in Minnesota, 486
Fox, James Rogers: Inside the British health plan, 125
Fractures, Hand and finger, 1129
Fractures of the femoral shaft, The use of the Kuntscher nail for, 837
Fracture treatment, The timing of, 1138
Freidman, Louis L.: Evaluation of female sterility, 938
Friedlander's pneumonia, 135
Frozen sections, Rapid—their value in diagnosis, 387
Future of the medical school of the University of Minnesota, The, 589

G

Gastrointestinal hemorrhage, Massive upper, 921
Gastrointestinal tract, upper, Problems in the roentgen diagnosis of bleeding lesions of the, 917
Gaviser, David: Solitary nonparasitic cysts of the liver, 831
Geraci, Joseph E., and Manning, Phil R.: Antibiotic therapy in bacterial endocarditis, 466
Gordon, Burgess: Women in medicine, 724
Gordon, George B., Berman, Reuben, and Sadoff, Charles M.: Quinidine intoxication occurring during therapy of auricular arrhythmias, 1052
Greenberg, Albert J., Leemhuis, Andrew J., and Benjamin, Edwin G.: Dissecting aneurysm of the aorta with neurological complications (case report), 625

H

Hagen, Paul S.: Hemolytic anemia, 128
Hall, Wendell H.: Brucellosis in man, 460
Hall, Wendell H., and Zinneman, Horace H.: Chronic pharyngeal and laryngeal histoplasmosis successfully treated with ethyl vanillate, 249
Hammes, E. M., Hammes, E. M., Jr., and Yamamoto, J.: Mental deficiency in a child whose mother was given electric convulsive therapy during gestation (case report), 1260
Hammes, E. M., Jr., Yamamoto, J., and Hammes, E. M.: Mental deficiency in a child whose mother was given electric convulsive therapy during gestation (case report), 1260
Hand and finger fractures, 1129
Hansen, Erling W.: Ophthalmology in the past century, 371
Harrington, Stuart W.: Extrapulmonary intrathoracic tumors, 953
Hastings, De Forest R.: Primary neoplasms of the lung, 594
Hastings, D. W., Jensen, R. A., Baker, A. B., and Schiele, B. C.: Neurologic and psychiatric trends in Minnesota, 384
Hayles, Alvin B.: Urgent surgical conditions in the newborn, 49
Health plan, British, Inside the, 125
Health problems of the United States, Modern, 730
Health service in Minnesota, Public, 244
Heart, The thyrotoxic, 759
Heck, Frank J.: Treatment of anemia, 40
Heimark, J. J., and Parsons, R. L.: Spinal injection of blood to lower blood pressure in essential hypertensive patients (case report), 738
Hemoglobin, Clinical determination of, 255
Hemolytic anemia, 128
Henderson, Charles C., and Henderson, Edward D.: The use of hydrocortisone acetate (compound F acetate) in the treatment of posttraumatic bursitis of the knee and elbow, 142
Henderson, Edward D., and Henderson, Charles C.: The use of hydrocortisone acetate (compound F acetate) in the treatment of posttraumatic bursitis of the knee and elbow, 142
Henry, Myron O., and Millett, D. Keith: Occult dislocation of the ankle, 1135
Hereditary hemorrhagic telangiectasis, 1154
Hernia, internal, Strangulation obstruction due to, 758
Herniorrhaphy, Inguinal, 1246
Herpes zoster with motor paralysis, 152
Hirschboeck, F. J.: The patient consults, 1227
Histoplasmin and tuberculin study of psychiatric patients having abnormal chest roentgenograms, A, 235
Histoplasmosis, Chronic pharyngeal and laryngeal, successfully treated with ethyl vanillate, 249
History of the Minnesota State Board of Medical Examiners, 341
"Horse and buggy" doctors, A country newspaperman wants more, 1039
Humoral vs. neural regulation of the extrahepatic biliary tract, 720
Hundred years of progress in the therapy of urinary infection, A, 378
Hydrocortisone acetate (compound F acetate), The use of, in the treatment of posttraumatic bursitis of the knee and elbow, 142
Hypernephroma, Obscure fever of, 488
Hypertensive, essential, patients, Spinal injection of blood to lower blood pressure in (case report), 738
Hyperthyroidism, Disturbances of the thyroid other than, 60

History of Medicine in Minnesota

Medical history of the County of Yellow Medicine, 627, 740, 851, 963, 1068, 1159, 1269

I

Immediate cholangiography in surgery, 761
Indications and precautions in cholecystectomy, 714
Infections of the urinary tract, 605
Inguinal herniorrhaphy, 1246
Injection therapy of varicose veins using sylnasol foam, 1249
Injuries, Wrist, 1132
Inside the British health plan, 125
Interventricular septum, Perforated (case report), 153
Interventricular septum, Rupture of the, secondary to myocardial infarction, 1149

In Memoriam

Adson, Alfred W., 73
Ahrens, Adolph H., 546
Aubin, Alexander, 880
Barr, William Hunter, 271
Benjamin, Arthur Edwin, 1182
Boothby, Walter Meredith, 880
Borgen, Alfred E., 992
Boyd, Leon Morrell, 768
Bregel, Fred L., 1285
Bryant, Oliver R., 650
Christianson, Harry W., 768
Clothier, Elton Forrest, 546
Coleman, Fred B., 182
Corrigan, J. E., 650
Coventry, William Albertus, 412
Cremer, Peter Hubert, 546
Crenshaw, John L., 768
Crombie, Francis J., 546
Cyr, Alphonse, 1182
Dahl, Gerhart A., 880
Dedolph, Theodore H., 271
Duncan, Henry, 769
Eklund, Edwin G., Jr., 880
Elsey, Edward McClintock, 1285
Engstrom, Frederick Alonzo, 546
Estrem, Carl O., 769, 992
Flores, Miguel Angel, 548
Flynn, Joseph P., 1090
Freeman, Charles D., 172
Frisch, Frank P., 413
Gallagher, Patrick J., 882
Gilbert, John D., 414
Hagen, Henry O., 1182
Hammond, Asa J., 182
Heise, William Frederick Carl, 650
Henderson, Elmer L., 972
Henry, Myron O., 1090
Holst, C. F., 271
Hultkrans, Joel C., 992
Hunte, August F., 880
Keyser, Linwood D., 271
Koop, Severin Herman, 414
Kortsch, F. Paul, 881
Larsen, Carl L., 272
Leitschuh, Linus F., 881
Lundgren, Albert Conrad, 1183
McCarthy, William Reginald, 770
McIver, Bert M., 1285
McLaren, Jennette M., 548
McLeod, James Lawrence, 770
Macnie, John Silliman, 272
Maytum, Charles K., 549
Mellby, Oscar F., 1285
Moe, Russell James, 414
Moren, Edward, 414
Nystrom, Ruth G., 182
Oppegaard, Manford O., 272
Plunkett, John E., 273
Pugliese, Frank M., 1090
Randall, A. Mason, 882
Reeve, Edward T., 771
Richardson, Walter Earl, 415
Robertson, John Banks, 1183
Rutherford, William C., 182
Schlesselman, George H., 1286
Seitz, Sherwood B., 1090
Sellers, Galen K., 650
Senescall, Cleve Ridlon, 1286
Stowe, Harold Robert, 183
Thabes, John A., 992
Werner, Robert F., 652
Wilson, William Franklin, 652
Wold, Karl Christian, 183

J

Jensen, Nathan K.: Management of patients with trauma of the chest, 247
Jensen, R. A., Baker, A. B., Schiele, B. C., and Hastings, D. W.: Neurologic and psychiatric trends in Minnesota, 384
Joffe, Harold H.: Senile nodular thyropathy, 145
Joffe, Harold H., Wells, Arthur H., Eckman, Ralph J., and Kragh, Lyle V.: Obscure fever of hypernephroma, 488
Johnson, Norman: Facts and fallacies in therapy, 1234
Johnson, Norman: Marginal neuroses in everyday practice—Orientation, 1225
Journalism, Medical, in Minnesota, 344
Juers, Edward H.: Wrist injuries, 1132

K

Keeley, John L.: The diagnosis and management of peripheral arterial embolism, 230
Kendall, Rodney F.: Dermatitis from industrial oils and chromates, 55
Keys, Ancel: Modern health problems of the United States, 730
Kierland, Robert R.: Neurosyphilis, 240
Kinsella, Thomas J.: The changing treatment of pulmonary tuberculosis, 29
Koenig, Robert P.: Allergic reaction to para-aminosalicylic acid, 850
Konig, Theodore, and Briggs, John F.: Hereditary hemorrhagic telangiectasis, 1154
Koucky, Rudolph W.: Blood banking in smaller Minnesota communities, 736
Kragh, Lyle V., Joffe, Harold H., Wells, Arthur H., and Eckman, Ralph J.: Obscure fever of hypernephroma, 488
Kram, Charles, and Berkwitz, N. J.: Patients' impressions of a community mental health center, 591
Kremen, Arnold J.: Cancer of the tongue, 828
Kuntscher nail, The use of the, for fractures of the femoral shaft, 837

L

Laboratory aids in the diagnosis of viral and rickettsial diseases, 1257
Laboratory diagnosis of tuberculosis, 1157
Laymon, Carl W.: The clinical diagnosis of some bullous dermatoses, 598
Leemhuis, Andrew J., Benjamin, Edwin G., and Greenberg, Albert J.: Dissecting aneurysm of the aorta with neurological complications (case report), 625
Lewis, F. John: Extended or super-radical mastectomy for cancer of the breast, 763
Lipscomb, Paul R., and Vandemoortele, Marcel H.: Diagnosis and treatment of postpoliomyelitic contractures, 824
Liver function, Sulfobromophthalein test of, 155
Liver, Solitary nonparasitic cysts of the, 831
Look backward, A, 471
Lundquist, Virgil J. P.: Pancreatitis complicating common duct surgery, 167

Lung, Primary neoplasms of the, 594
Lupus erythematosus, The problem of, 1043
Lynch, Francis W., and Michelson, Henry E.: Dermatology in the first century of medicine in Minnesota, 375

Laboratory Aids to Medical Practice

Aspiration biopsy of bone marrow, 961
Blood banking in smaller Minnesota communities, 736
Clinical determination of hemoglobin, 255
Fatal enterotoxic reactions caused by antibiotic therapy, 63
Laboratory aids in the diagnosis of viral and rickettsial diseases, 1257
Laboratory diagnosis of tuberculosis, 1157
Practical considerations in cervical cytology, 1065
Rapid frozen sections—their value in diagnosis, 387
Ray of hope for a change, A (coroner system), 490
Sulfobromophthalein test of liver function, 155
Tests for cancer, 623

Mc

McCannel, Malcolm A.: Red sore eye emergency care, 1046
McCartney, James S.: A ray of hope for a change (coroner system), 490
McIntosh, Alan C.: A country newspaperman wants more "horse and buggy" doctors, 1039
McLaughlin, B. H., and Maxeiner, Stanley R.: Synovial sarcoma, 174

M

Magney, F. H.: History of the Minnesota State Board of Medical Examiners, 341
Male sterility, 935
Management of patients with trauma of the chest, 247
Mann, Frank D.: Clinical determination of hemoglobin, 255
Manning, Phil R., and Geraci, Joseph E.: Antibiotic therapy in bacterial endocarditis, 466
Marginal neuroses in everyday practice—Orientation, 1225
Masses in the right lower quadrant of the abdomen, A study of, 481
Massive upper gastrointestinal hemorrhage, 921
Mastectomy, extended or super-radical, for cancer of the breast, 763
Maternal mortality study, Minnesota, 609
Maxeiner, Stanley R., and McLaughlin, B. H.: Synovial sarcoma, 174
Mears, Burtis J.: Coronary insufficiency, 57
Medical journalism in Minnesota, 344
Medical school in relation to medical practice in the state, The, 23
Medical school of the University of Minnesota, The future of the, 589
Medical schools and medical education over the past century, 332
Medical technologist and the University of Minnesota, The, 1061
Medicine, A century of, 349
Mental deficiency in a child whose mother was given electric convulsive therapy during gestation (case report), 1260
Mental health center, community, Patients' impressions of a, 591
Michelson, Henry E.: The problem of lupus erythematosus, 1043
Michelson, Henry E., and Lynch, Francis W.: Dermatology in the first century of medicine in Minnesota, 375
Millett, D. Keith, and Henry, Myron O.: Occult dislocation of the ankle, 1135
Minnesota maternal mortality study, 609
Minnesota obstetrics, 381
Minnesota medical profession and tuberculosis, The, 944
Minnesota State Board of Medical Examiners, History of the, 341
Mitchell, B. D.: Strangulation obstruction due to internal hernia, 758
Moberg, C. W.: Becker County blood bank, 1241
Modern health problems of the United States, 730
Modern otolaryngology as a specialty, 368
Moos, Daniel J.: The use of the Kuntscher nail for fractures of the femoral shaft, 837
Mortensen, J. D., and Bargen, J. Arnold: A study of masses in the right lower quadrant of the abdomen, 481
Myers, J. Arthur: The Minnesota medical profession and tuberculosis, 944
Myhre, James: Danger of ammonium chloride acidosis, 133
Myocardial infarction, Rupture of the interventricular septum secondary to, 1149

Medical Economics

'54 health-welfare budget issued, 261
AMA criticizes Commission report, 260
AMA delegates meet, discuss, debate, plan, 755
AMA meeting planned for New York, 501
AMA reapproves medical expense deductions, 863
AMA studies postgraduate medical education, 1266
Annual survey shows health insurance gain, 1169
Armed forces have too many doctors, 1170
Association dues are comparatively small, 641
Basic science research gets fund grant, 1083
CIO urges members to action for health, 1081
Commission formed to study taxes, social security, 396
Commission reports on military dependents' care, 973
Communist logic falls short, 166
Construction continues on Hill-Burton hospitals, 975
Costs and inflation slow Hill-Burton program, 70
Diet film gets good response, 1266
Editor hits "federal thought control," 165
Ewing trip called Oscar's "deep bow," 261
Facilities increase for rural medical care, 395
FDIC furnishes health coverage, 72
Federal aid sought for medical care plans, 1168
Federal government underwrites insurance, 502
Figures show increase in lives saved, 642
Government survey shows VA abuses, 1170
Health insurance book available from AMA, 864
Health insurance held by half of United States, 71
Hearings end on medical research funds, 1267
Hospital accreditation group issues progress report, 164
Increase noted in medical education fund, 862
Interns, residents in training double, 1268
Justice Department to handle VA fraud cases, 1266
Magazine urges review of voluntary insurance, 1082
More savings, spending reflect living standard rise, 756
National Health Council reviews commission report, 502
New proposals sent to Health Insurance Plan, 1081
President recommends social security increase, 1083
Public debt near legal limit, 974
Reorganization plan goes into effect, 500
Report totals federal research aid, 975
Republican victory deals blow at state medicine, 70
Social security survey termed hard task, 641
Social security system hit by Senator Bricker, 863
State medicine has economic appeal, 862
Survey shows GP fares well, 396

Minnesota Department of Health

Change in vital statistics law to affect physicians beginning July 1, 1953, 499
Distribution and use of gamma globulin, 496
Hospital personnel shortage, 1172
Reporting of all deaths due to or associated with pregnancy, 639

Minnesota State Board of Medical Examiners

Court Procedures:
  Minnesota vs.
    Engstrom, 397, 757
    Johnstone, Virginia Mae, and Berg, Edward A., 1083
    Mullane, Lillian M., 1268
    Schmidt, George F., and Dinsmore, Maryllyn M., 757, 975
  United States vs. Russell R. Heim, 72, 397
Physicians licensed in 1952, 503

Miscellaneous

American Medical Association
  House of Delegates—Résumé of proceedings, New York City, June 1-5, 1953, 865
  Summary, clinical session, December 2-5, 1952, 161
Gamma globulin for measles and hepatitis, 393
Problems of tuberculosis control, The, 393

N

Needham, Gerald M.: Laboratory diagnosis of tuberculosis, 1157
Neoplasms, Primary, of the lung, 594
Neurologic and phychiatric trends in Minnesota, 384
Neuroses, Marginal, in everyday practice—Orientation, 1225
Neurosyphilis, 240
Newborn, Urgent surgical conditions in the, 49
Newer concepts on the coagulation of the blood, 726
Nordland, Martin, and Nordland, Martin A.: Disturbances of the thyroid other than hyperthyroidism, 60
Nordland, Martin A., and Nordland, Martin: Disturbances of the thyroid other than hyperthyroidism, 60
Nutrition, parenteral, An approach toward the ideal in, 221

O

Obscure fever of hypernephroma, 488
Obstetrics, Minnesota, 381
Occult dislocation of the ankle, 1135
Oils and chromates, industrial, Dermatitis from, 55
One hundred years of organized medicine in Minnesota, 323
One hundred years of surgical progress, 356
Ophthalmology in the past century, 371
Organized medicine in Minnesota, One hundred years of, 323
Otolaryngology, Modern, as a specialty, 368
Owen, Charles A., Jr.: Sulfobromophthalein test of liver function, 155

P

Prancreatitis complicating common duct surgery, 167
Para-aminosalicylic acid, Allergic reaction to, 850
Paralysis, motor, Herpes zoster with, 152
Parenteral nutrition, An approach toward the ideal in, 221
Parsons, R. L., and Heimark, J. J.: Spinal injection of blood to lower blood pressure in essential hypertensive patients (case report), 738
Patient consults, The, 1227
Patients' impressions of a community mental health center, 591
Paulson, E. C., and Sterrie, Norman: Cleido-cranial dysostosis, 1152
Pease, Gertrude L.: Aspiration biopsy of bone marrow, 961
Pediatrics, Progress in, in Minnesota, 364
Peptic ulcer problem, The, 924
Perforated interventricular septum (case report), 153
Peterson, John H.: Common ocular manifestations of diabetes mellitus, 45
Physical symptoms of depression, 148
Physician and his estate, The, 1033
Pneumonia, Friedlander's, 135
Postpoliomyelitic contractures, Diagnosis and treatment of, 824
Practical considerations in cervical cytology, 1065
Premature survival, 253
Present status of tuberculosis in Minnesota, The, 33
Primary neoplasms of the lung, 594
Problems in the roentgen diagnosis of bleeding lesions of the upper gastrointestinal tract, 917
Problem of lupus erythematosus, The, 1043
Progress in pediatrics in Minnesota, 364
Psychiatric, Neurologic and, trends in Minnesota, 384
Psychiatric patients having abnormal chest roentgenograms, A histoplasmin and tuberculin study of, 235
Psychiatry and religion, 711
Public health, Eighty years of, 337
Public health service in Minnesota, 244
Puestow, Charles B.: Carcinoma of cardiac end of stomach and esophagus, 170

President's Letter

Age of retirement, The, 1076
Delegates decide, The, 492
Difficult decision, A, 635
Especially for you, 1164
For the benefit of the sick, 389
Good beginning, A, 157
Medical allies, 969
Round-up season, 858
Support equals improvement, 750
These things I have liked, 1262
Viewing for health, 257
Year to remember, A, 69

Q

Quick, Armand J.: Newer concepts on the coagulation of the blood, 726
Quinidine intoxication occurring during therapy of auricular arrhythmias, 1052

R

Radiography, Routine chest, Some personal observations on the use of, 701
Radioisotopes, The use of, in treatment, 817
Rall, J. E.: The use of radioisotopes in treatment, 817
Rapid frozen sections—their value in diagnosis, 387
Ravits, Harold G.: Dermo-fungous allergy, 602
Ray of hope for a change, A (coroner system), 490
Red sore eye emergency care, 1046
Religion, Psychiatry and, 711
Reminiscence of certain events before, during and after the discovery of cortisone, A, 705
Responsibility of the practicing physician and health department in the care of the aged, The, 137
Rice, Carl O., and Strickler, J. H.: An approach toward the ideal in parenteral nutrition, 221
Rickettsial diseases, viral and, Laboratory aids in the diagnosis of, 1257
Roentgen diagnosis of bleeding lesions of the upper gastrointestinal tract, Problems in, 917
Rome, Howard P.: The dynamics of emotions, 1232
Rosenfield, A. B., Allen, William, and Storey, Emerson W.: Accidents—chief killer of children, 1141
Rosenthal, Robert: One hundred years of organized medicine in Minnesota, 323
Rosenthal, Robert: St. Joseph's Hospital, 693
Rowe, O. W.: Progress in pediatrics in Minnesota, 364
Rupture of the interventricular septum secondary to myocardial infarction, 1149

Reports and Announcements

Alumni Association of the Mayo Foundation, 1277

American Academy of General Practice to hold sixth annual scientific assembly, 1174
American College of Allergists, 404
American College of Chest Physicians:
  1954 essay awards, 874
  Eighth annual postgraduate course, 876
  Sixth annual postgraduate course, 176
  Twentieth annual meeting, 879
American College of Physicians, 1086
American College of Surgeons, 774, 986
American Congress of Physical Medicine and Rehabilitation, 404, 873
American Goiter Association, 264
American Medical Writers meeting, 873
American Urological Association award, 873
Annual Phi Delta Epsilon lectureship, 1276
Association backs TV show, 266
Association for Research in Ophthalmology, 1276
Audiography course, 264
Award for outstanding research in the field of infertility, 76, 1086
Blue Earth County Society, 180
Board of Education examination, 405
Brown-Redwood-Watonwan County Medical Society, 268
Cancer Society gives University of Minnesota $75,000 for research work, 1087
Centennial art and hobby show, 266
Central Association of Obstetricians and Gynecologists, 406
Civil service positions available to physicians, 264
College of Physicians postgraduate course, 264
Congress of Cardiology, Second International, 772
Congress of Physical Medicine and Rehabilitation, 176
Continuation Courses:
  Arthritis and allergy for general physicians, 267
  Cancer detection for general physicians, 78, 1279
  Cardiovascular diseases, 76
  Child psychiatry for general physicians, pediatricians and psychiatrists, 1279
  Clinical dietetics, 78
  Conference on the infertility problem for physicians, 1280
  Dental problems in medicine for physicians, 878
  Dermatology, 1088
  Diseases of the chest, 878
  Electrocardiography, 408
  Fractures, 988
  Fundamental advances in internal medicine for internists, 1279
  Gastroenterology for general physicians, 267
  Gyneclogy for specialists, 267
  Hematology for medical technologists, 878
  Medical jurisprudence for physicians, 988
  Neurology for general physicians and specialists, 1279
  Obstetrics for general physicians, 1088
  Pediatrics for general physicians, 1176
  Proctology, 178
  Radiation therapy for specialists, 878
  Radiology for general physicians, 407
  Recent advances in diagnosis for internists, 78
  Rehabilitation for general physicians, 988
  Surgery for general physicians, 267
  Tuberculosis for lay persons, 988
Courses in medical uses of isotopes, 644
Course in occupational skin problems, 874
Family Doctors' Days, 408, 545
Fellowships for basic research in arthritis, 986
First International Convention of X-Ray Technicians, 405
Heart disease research grants, 545
Heart program over KUOM, 1276
Heart speciality traineeships, 176
Hennepin County Medical Society, 268, 1176
Homecoming clinic to be held at University of Minnesota, 1088
Industrial Health Conference, 80
Industrial Health Institute, 772
Industrial medicine fellowships, 1276
Industrial Microbiology Institute, 404
Institute of Esophageal Speech, 644
International Academy of Proctology, 402
International College of Surgeons, 76
International College of Surgeons to meet in New York in September, 772
International Symposium on Cardiovascular Physiology and Surgery, 1084
Judd, E. Starr, lecture, 406
Kandiyohi-Swift-Meeker County Society, 1280
Kenfield memorial award, 176
Lincoln-Lyon County postgraduate extension course, 1177
Lyon, Elias P., memorial lecture, 1277
McLeod County Medical Society, 268
Manual for arthritis clinics, 176
Midwinter seminar in ophthalmology and otolaryngology, 1174
Minneapolis Surgical Society:
  Meeting of October 1, 1952, 167
  Meeting of December 4, 1952, 758
  Meeting of January 8, 1953, 761
Minnesota Academy of General Practice, 1088
Minnesota Academy of Medicine:
  Meeting of May 14, 1952, 73
  Meeting of October 8, 1952, 172
  Meeting of November 12, 1952, 542
  Meeting of December 10, 1952, 542
  Meeting of January 14, 1953, 544
  Meeting of February 11, 1953, 1171
  Meeting of March 11, 1953, 1171
Minnesota Academy of Occupational Medicine and Surgery, 1276
Minnesota Public Health Conference, 877, 1174
Minnesota Society of Internal Medicine, 266
Minnesota Society of Neurology and Psychiatry, 178, 406, 644
Minnesota State Medical Association:
  Program—One hundredth anniversary meeting, 398
  Roster, 509
  House of Delegates—Summary of proceedings, 978
MSMA Committee on Conservation of Hearing, 407
Mississippi Valley Medical Society:
  Contest, 76
  Eighteenth annual meeting, 877
Mississippi Valley tuberculosis meeting, 986
National Council on Rural Health, 178
National Gastroenterological Association, 404, 873
National Society for Crippled Children and Adults, 1084
National Society for Medical Research, 264
New course for laboratory aids, 878
New Orleans Graduate Medical Assembly, 1174
Northern Minnesota Medical Association, 872
Nurse scholarships available, 646
Ophthalmology and otolaryngology convention, 80
Pan American Medical Women's Alliance, 876
Pan-Pacific Surgical Association, 644
Physicians needed for the Bureau of Indian Affairs, 545
Postgraduate Assembly in endocrinology and metabolism, 775
Postgraduate course in diabetes and basic metabolic problems, 1277
Postgraduate course on diseases of the chest, 1278
Postgraduate teaching fund for gift subscriptions to hospitals, 1174
Public health nurse civil service examinations, 1176
Refresher courses for x-ray technicians, 990
Rigler, Leo G., lecture, 1088
St. Joseph's Hospital centennial, 402
St. Louis County Society, 180
Senior class luncheon, 646
Southern Minnesota Medical Association, 872, 1177
Southwestern Minnesota Medical Society, 1281
Stearns-Benton Medical Society, 268
Steele County Medical Society, 409
Summer camp for diabetic children, 266

Surgeons Hall of Fame, 264
Surgery research scholarships available, 644
Symposium on cardiovascular physiology and surgery, 877
University Hospitals open multiple sclerosis clinic, 774
University of Minnesota medical school changes requirements, 644
Van Meter prize award, 988
Wabasha County Medical Society, 1281
Walter Reed Society, 545
Wangensteen Education Foundation established, 646
Washington County Medical Society, 268
Woman's Auxiliary, 181, 269, 410, 545, 648, 879, 991, 1089, 1178, 1282
World Congress on Fertility and Sterility, 76
World Medical Association and Pan American Conference, 76

S

St. Joseph's Hospital, 693
Sadler, William P.: Minnesota obstetrics, 381
Sadoff, Charles M., Gordon, George B., and Berman, Reuben: Quinidine intoxication occurring during therapy of auricular arrhythmias, 1052
Scallen, Raymond: The doctor as a medical witness, 1036
Schaefer, Wesley G.: Inguinal herniorrhaphy, 1246
Scherling, S. S.: Premature survival, 253
Schiele, B. C., Hastings, D. W., Jensen, R. A., and Baker, A. B.: Neurologic and psychiatric trends in Minnesota, 384
Schools, Medical, and medical education over the past century, 332
Security, Social, for physicians, 1238
Senile nodular thyropathy, 145
Sharp, David V.: Perforated interventricular septum (case report), 153
Sheppard, Charles G.: Public health service in Minnesota, 244
Sheppard, Charles G.: The medical school in relation to medical practice in the state, 23
Smiley, John T., and Tillisch, Jan H.: Civil defense: a report to the membership, 457
Social security for physicians, 1238
Solitary nonparasitic cysts of the liver, 831
Some personal observations on the use of routine chest radiography, 701
Spinal injection of blood to lower blood pressure in essential hypertensive patients (case report), 738
Spink, Wesley W.: The medical technologist and the University of Minnesota, 1061
Sterility, female, Evaluation of, 938
Sterility, Male, 935
Sterrie, Norman, and Paulson, E. C.: Cleido-cranial dysostosis, 1152
Stomach and esophagus, Carcinoma of cardiac end of, 170
Storey, Emerson W., Rosenfield, A. B., and Allen, William: Accidents—chief killer of children, 1141
Strangulation obstruction due to internal hernia, 758
Strickler, J. H., and Rice, Carl O.: An approach toward the ideal in parenteral nutrition, 221
Study of masses in the right lower quadrant of the abdomen, A, 481
Sulfobromophthalein test of liver function, 155
Surgery, Early orthopedic, in Minnesota, 360
Surgical approach to atelectasis in the newborn, 172
Surgical conditions, Urgent, in the newborn, 49
Surgical progress, One hundred years of, 356
Synovial sarcoma, 174

T

Technologist, The medical, and the University of Minnesota, 1061
Telangiectasis, Hereditary hemorrhagic, 1154
Tests for cancer, 623
Therapy, Facts and fallacies in, 1234
Thyroid, Disturbances of the, other than hyperthyroidism, 60
Thyrotoxic heart, The, 759
Thyropathy, Senile nodular, 145
Tillisch, Jan H., and Smiley, John T.: Civil defense: a report to the membership, 457
Timing of fracture treatment, The, 1138
Tongue, Cancer of the, 828
Trail, Richard: Some personal observations on the use of routine chest radiography, 701
Treatment of anemia, 40
Troxell, Millard A.: A histoplasmin and tuberculin study of psychiatric patients having abnormal chest roentgenograms, 235
Tuberculosis case registers in Minnesota, Analysis of, 486
Tuberculosis, Laboratory diagnosis of, 1157
Tuberculosis, pulmonary, The changing treatment of, 29
Tuberculosis, The Minnesota medical profession and, 944
Tuberculosis, The present status of, in Minnesota, 33
Tumor, An acute cervical, in a mentally deficient child, 1253
Tumors, Extrapulmonary intrathoracic, 953

U

Ulcer problem, The peptic, 924
Urgent surgical conditions in the newborn, 49
Urinary infection, A hundred years of progress in the therapy of, 378
Urinary tract, Infections of the, 605
Use of hydrocortisone acetate (compound F acetate) in the treatment of posttraumatic bursitis of the knee and elbow, The, 142
Use of radioisotopes in treatment, The, 817
Use of the Kuntscher nail for fractures of the femoral shaft, 837

V

Vandemoortele, Marcel H., and Lipscomb, Paul R.: Diagnosis and treatment of postpoliomyelitic contractures, 824
Varicose veins, Injection therapy of, using sylnasol foam, 1249
Viral and rickettsial diseases, Laboratory aids in the diagnosis of, 1257
Vogel, Howard A.: Cesarean section complicated by cholelithiasis, 1067

W

Walder, Harold J.: Male sterility, 935
Wangensteen, Owen H.: A look backward, 471
Wangensteen, Owen H.: The peptic ulcer problem, 924
Wells, Arthur H., Eckman, Ralph J., Kragh, Lyle V., and Joffe, Harold H.: Obscure fever of hypernephroma, 488
White, S. Marx: A century of medicine, 349
Wilson, Netta, and Chesley, Albert J.: Eighty years of public health, 337
Witness, medical, The doctor as a, 1036
Women in medicine, 724
Wrist injuries, 1132
Wyatt, O. S., Chisholm, T. C., Berglund, E., and Eder, W. P.: Surgical approach to atelectasis in the newborn, 172

Y

Yamamoto, J., Hammes, E. M., and Hammes, E. M., Jr.: Mental deficiency in a child whose mother was given electric convulsive therapy during gestation (case report), 1260

Z

Zinneman, Horace H., and Hall, Wendell H.: Chronic pharyngeal and laryngeal histoplasmosis successfully treated with ethyl vanillate, 249

HLOROMYCETIN (chloramphenicol, Parke-Davis)
available in a variety of forms, including:

HLOROMYCETIN Kapseals,® 250 mg., bottles of 16 and 100.
HLOROMYCETIN Capsules, 100 mg., bottles of 25 and 100.
HLOROMYCETIN Capsules, 50 mg., bottles of 25 and 100.
HLOROMYCETIN Ophthalmic Ointment, 1%, ⅛-ounce collapsible tubes.
HLOROMYCETIN Ophthalmic, 25 mg. dry powder for solution, individual vials with droppers.

ICAMENTA · VERA ·
PD & CO.

Parke, Davis & Company
DETROIT, MICHIGAN

SET YOUR SIGHTS

Set your sights ahead. Don't wait for a catastrophe to happen before you think of the advisability of Income Protection. It's too late then.

Now is the time to call this office for the Special Accident and Health Policy used by a large majority of your Association to protect their income.

DELAY OFFERS YOU NO ADVANTAGES

CASWELL-ROSS AGENCY

1177 N. W. Bank Building
Minneapolis 2, Minnesota
Minneapolis—MA 2585
St. Paul—ZE 2341

Insurors to:

Minnesota State Bar Association
Minnesota State Dental Association
Minnesota State Medical Association
Minnesota Society of C. P. A.
Minnesota State Pharmaceutical Assn.
Minnesota Auto Dealers Association
Minnesota Federation of Eng. Societies
Minnesota State Veterinary Medical Soc.
Hennepin County Medical Society
Hennepin County Bar Association
11th Judicial Bar Association
Minnesota Association of Life Underwriters
Ramsey County Medical Society
Ramsey County Bar Association
St. Paul District Dental Soc.
Minneapolis District Dental Soc.
St. Cloud Dental and Stearns County Medical Society
Duluth District Dental Society
East Central Medical Society
St. Louis County Medical Society
West Central Dist. Dental Society
Northwest Proprietors Association
St. Paul Life Underwriters, Inc.

Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 36 **January, 1953** **Number 1**

Contents

The Medical School in Relation to Medical Practice in the State.
Charles G. Sheppard, M.D., Hutchinson, Minnesota........................ 23

The Changing Treatment of Pulmonary Tuberculosis.
Thomas J. Kinsella, M.D., Minneapolis, Minnesota........................ 29

The Present Status of Tuberculosis in Minnesota.
Francis F. Callahan, M.D., Saint Paul, Minnesota........................ 33

Treatment of Anemia.
Frank J. Heck, M.D., Rochester, Minnesota....... 40

Common Ocular Manifestations of Diabetes Mellitus.
John H. Peterson, M.D., Duluth, Minnesota....... 45

Urgent Surgical Conditions in the Newborn.
Alvin B. Hayles, M.D., Rochester, Minnesota...... 49

Dermatitis from Industrial Oils and Chromates.
Rodney F. Kendall, M.D., Great Falls, Montana.... 55

Coronary Insufficiency.
Burtis J. Mears, M.D., Saint Paul, Minnesota..... 57

Disturbances of the Thyroid Other Than Hyperthyroidism.
Martin A. Nordland, M.D., and *Martin Nordland, M.D.,* Minneapolis, Minnesota. 60

Laboratory Aids to Medical Practice.
Fatal Enterotoxic Reactions Caused by Antibiotic Therapy 63

Editorial:
The Medical School and Medical Practice........ 65
Minnesota's Needs in the Fight Against Tuberculosis 65
New Commission on Accreditation of Hospitals.... 66
Effect of TV Crime Programs on Children....... 66
Sister Elizabeth Kenny.......................... 67

Photograph:
Orwood J. Campbell, M.D., President, Minnesota State Medical Association........... 68

President's Letter:
A Year to Remember.......................... 69

Medical Economics:
Costs and Inflation Slow Hill-Burton Program.... 70
Republican Victory Deals Blow at State Medicine.. 70
Health Insurance Held by Half of United States.. 71
FDIC Furnishes Health Coverage................ 72

Minnesota State Board of Medical Examiners.... 72

Minnesota Academy of Medicine:
Meeting of May 14, 1952........................ 73
Alfred W. Adson, Memorial...................... 73
Discussion on papers by *E. F. Callahan, M.D.,* and *Thomas J. Kinsella, M.D*..................... 73

Reports and Announcements...................... 76

Of General Interest............................. 82

Book Reviews.................................... 91

Contents of Minnesota Medicine copyrighted by Minnesota State Medical Association, 1953

Entered at the Post Office in Saint Paul as second class mail matter. Accepted for mailing at the special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 13, 1918.

MINNESOTA MEDICINE

Official Journal of the Minnesota State Medical Association
Published by the Association under the direction of its Editing and Publishing Committee

Office of Minnesota State Medical Association,
496 Lowry Medical Arts Bldg., Saint Paul 2, Minnesota.

EDITING AND PUBLISHING COMMITTEE

E. M. Hammes, Saint Paul	T. A. Peppard, Minneapolis
Philip F. Donohue, Saint Paul	H. A. Roust, Montevideo
L. M. Eaton, Rochester	O. W. Rowe, Duluth
J. J. Heimark, Fairmont	Henry L. Ulrich, Minneapolis
C. L. Oppegaard, Crookston	A. H. Wells, Duluth

EDITORIAL STAFF

Carl B. Drake, Saint Paul, Editor
George Earl, Saint Paul, Associate Editor
Henry L. Ulrich, Minneapolis, Associate Editor

BUSINESS MANAGER
J. R. Bruce

Annual Subscription—$3.00. Single Copies—$0.40. Foreign and Canadian Subscriptions—$3.50.

The right is reserved to reject material submitted for editorial or advertising columns. The Editing and Publishing Committee does not hold itself responsible for views expressed either in editorials or other articles when signed by the author.

Classified advertising—ten cents a word; minimum charge, $2.00; key number, 25c additional. Remittance should accompany order.

Display advertising rates on request.

Address all communications concerning the journal to Minnesota Medicine, 2642 University Avenue, Saint Paul 14, Minnesota. Telephone Nestor 2641.

A MODERN PRIVATE SANITARIUM

for the Diagnosis, Care and Treatment of Nervous and Mental Disorders

MAIN BUILDING—One of 8 Units in "Cottage Plan"

ST. CROIXDALE ON LAKE ST. CROIX

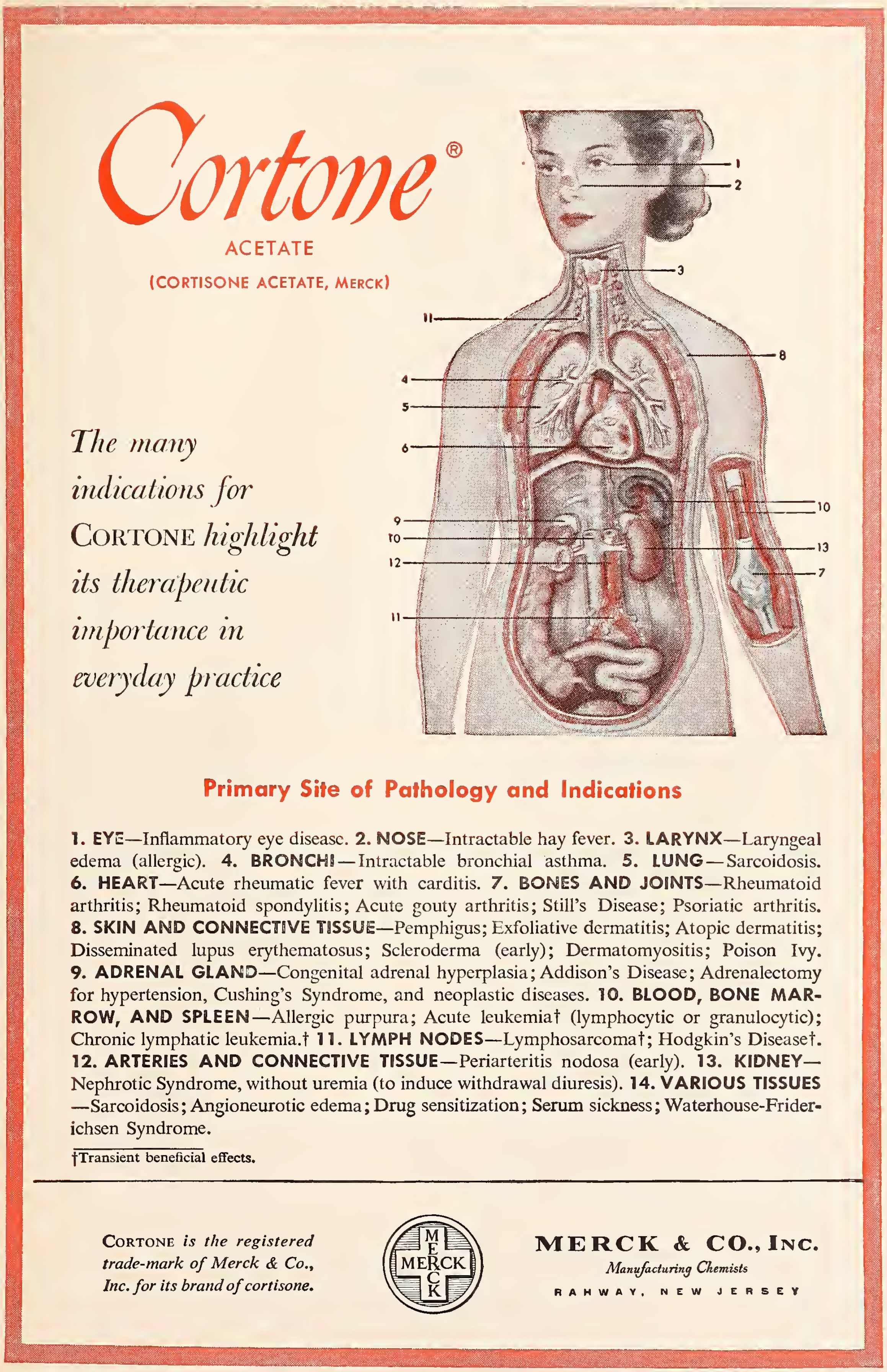
PRESCOTT, WISCONSIN

Located on beautiful Lake St. Croix, 18 miles from the Twin Cities, it has the advantages of both City and Country. Every facility for treatment provided, including recreational activities and occupational-therapy under trained personnel. Close personal supervision given patients, and modern methods of therapy employed. Inspection and cooperation by reputable physicians invited. Rates very reasonable. Illustrated folder on request.

Prescott Office
Prescott, Wisconsin
Howard J. Laney, M.D.
Tel. 39 and Res., 76

Consulting Neuro-Psychiatrists
Hewitt B. Hannah, M.D., Andrew J. Leemhuis, M.D.
511 Medical Arts Bldg., Tel. MAin 1357, Minneapolis, Minn.

Superintendent
Ella M. Leseman
Prescott, Wisconsin
Tel. 69



Cortone®

ACETATE

(CORTISONE ACETATE, MERCK)

The many indications for CORTONE *highlight its therapeutic importance in everyday practice*

Primary Site of Pathology and Indications

1. EYE—Inflammatory eye disease. **2. NOSE**—Intractable hay fever. **3. LARYNX**—Laryngeal edema (allergic). **4. BRONCHI**—Intractable bronchial asthma. **5. LUNG**—Sarcoidosis. **6. HEART**—Acute rheumatic fever with carditis. **7. BONES AND JOINTS**—Rheumatoid arthritis; Rheumatoid spondylitis; Acute gouty arthritis; Still's Disease; Psoriatic arthritis. **8. SKIN AND CONNECTIVE TISSUE**—Pemphigus; Exfoliative dermatitis; Atopic dermatitis; Disseminated lupus erythematosus; Scleroderma (early); Dermatomyositis; Poison Ivy. **9. ADRENAL GLAND**—Congenital adrenal hyperplasia; Addison's Disease; Adrenalectomy for hypertension, Cushing's Syndrome, and neoplastic diseases. **10. BLOOD, BONE MARROW, AND SPLEEN**—Allergic purpura; Acute leukemia† (lymphocytic or granulocytic); Chronic lymphatic leukemia.† **11. LYMPH NODES**—Lymphosarcoma†; Hodgkin's Disease†. **12. ARTERIES AND CONNECTIVE TISSUE**—Periarteritis nodosa (early). **13. KIDNEY**—Nephrotic Syndrome, without uremia (to induce withdrawal diuresis). **14. VARIOUS TISSUES**—Sarcoidosis; Angioneurotic edema; Drug sensitization; Serum sickness; Waterhouse-Friderichsen Syndrome.

†Transient beneficial effects.

CORTONE *is the registered trade-mark of Merck & Co., Inc. for its brand of cortisone.*

MERCK & CO., INC.
Manufacturing Chemists
RAHWAY, NEW JERSEY

Minnesota State Medical Association

1953

Officers

O. J. Campbell, M.D	*President*	Minneapolis
Justus Ohage, M.D	*First Vice President*	Saint Paul
C. E. Merkert, M.D	*Second Vice President*	Minneapolis
B. B. Souster, M.D	*Secretary*	Saint Paul
W. H. Condit, M.D	*Treasurer*	Minneapolis
C. G. Sheppard, M.D	*Speaker, House of Delegates*	Hutchinson
H. M. Carryer, M.D	*Vice Speaker*	Rochester
R. R. Rosell	*Executive Secretary*	Saint Paul

Councilors

(Terms expire December 31 of year indicated)

First District	John M. Waugh, M.D. (1953)	Rochester
Second District	R. C. Hunt, Sr., M.D. (1953)	Fairmont
Third District	L. G. Smith, M.D. (1955)	Montevideo
Fourth District	H. J. Nilson, M.D. (1954)	North Mankato
Fifth District	L. R. Critchfield, M.D. (1955)	Saint Paul
Sixth District	H. B. Sweetser, M.D. (1954)	Minneapolis
Seventh District	W. W. Will, M.D. (1955)	Bertha
Eighth District	C. L. Oppegaard, M.D. (1954)	Crookston
Ninth District	A. O. Swenson, M.D. (1953)	Duluth

House of Delegates, American Medical Association

(Terms expire December 31 of year indicated)

Members

J. Arnold Bargen, M.D. (1954)	Rochester
O. J. Campbell, M.D. (1953)	Minneapolis
George Earl, M.D. (1953)	Saint Paul

Alternates

Paul C. Leck, M.D. (1954)	Austin
W. W. Will, M.D. (1953)	Bertha
E. M. Hammes, Sr., M.D. (1953)	Saint Paul

Scientific Committees

ANESTHESIOLOGY

R. C. Adams, M.D	Rochester
J. W. Baird, M.D	Minneapolis
J. H. Crowley, M.D	Saint Paul
R. T. Knight, M.D	Minneapolis
R. C. Knutson, M.D	Saint Paul
K. E. Latterell, M.D	Duluth
T. H. Seldon, M.D	Rochester

BLOOD AND BLOOD BANKS

J. S. Lundy, M.D	Rochester
Paul F. Dwan, M.D	Minneapolis
J. W. Edwards, M.D	Saint Paul
E. V. Goltz, M.D	Saint Paul
Wm. V. Knoll, M.D	Duluth
R. W. Koucky, M.D	Minneapolis
N. C. Plimpton, Jr., M.D	Minneapolis

BRUCELLOSIS

W. W. Spink, M.D	Minneapolis
James J. Coll, M.D	Duluth
Dean S. Fleming, M.D	Hopkins
W. A. Merritt, M.D	Rochester
R. A. Nelson, M.D	Fergus Falls

CANCER

(Three-year appointment)

A. H. Wells, M.D. (1953)	Duluth
David P. Anderson, Jr., M.D. (1955)	Austin
Herbert Boysen, M.D. (1955)	Madelia
Dean S. Fleming, M.D. (1953)	Hopkins
Merriam G. Fredricks, M.D. (1953)	Duluth
E. C. Hartley, M.D. (1955)	Saint Paul
N. K. Jensen, M.D. (1954)	Minneapolis
James A. Johnson, M.D. (1954)	Minneapolis
N. Logan Leven, M.D. (1953)	Saint Paul
T. B. Magath, M.D. (1953)	Rochester
R. A. Rossberg, M.D. (1954)	Morris
C. G. Uhley, M.D. (1954)	Crookston

CHILD HEALTH

G. B. Logan, M.D.	Rochester
S. L. Arey, M.D.	Minneapolis
T. C. Chisholm, M.D.	Minneapolis
F. G. Hedenstrom, M.D.	Saint Paul
O. H. Jones, M.D.	Mankato
R. E. Nutting, M.D.	Duluth
W. B. Richards, M.D.	Saint Cloud
L. F. Richdorf, M.D.	Minneapolis
A. B. Rosenfield, M.D.	Minneapolis
V. O. Wilson, M.D.	Rochester

CHRONIC ILLNESS

E. L. Tuohy, M.D.	Duluth
C. A. Anderson, M.D.	Hector
F. W. Conley, M.D.	Duluth
A. J. Greenberg, M.D.	Minneapolis
John A. Lepak, M.D.	Saint Paul
C. W. Leverenz, M.D.	Saint Paul
Daniel F. McCann, M.D.	Bemidji
Arthur Neumaier, M.D.	Glencoe
J. F. Norman, M.D.	Crookston
W. A. Piper, M.D.	Mountain Lake

CONSERVATION OF HEARING

L. R. Boies, M.D.	Minneapolis
John H. Cameron, M.D.	Crookston
C. E. Connor, M.D.	Saint Paul
J. B. Gaida, M.D.	Saint Cloud
Anderson Hilding, M.D.	Duluth
Conrad J. Holmberg, M.D.	Minneapolis
K. M. Simonton, M.D.	Rochester
J. Donald Sjoding, M.D.	Mankato

DIABETES

J. R. Meade, M.D.	Saint Paul
Moses Barron, M.D.	Minneapolis
J. J. Coll, M.D.	Duluth
J. A. Lepak, M.D.	Saint Paul
J. K. Moen, Jr., M.D.	Minneapolis
W. S. Neff, M.D.	Virginia
B. F. Pearson, M.D.	Shakopee
E. H. Rynearson, M.D.	Rochester
R. V. Sherman, M.D.	Red Wing
C. W. Vandersluis, M.D.	Bemidji

FIRST AID AND RED CROSS

J. S. Lundy, M.D.	Rochester
E. R. Anderson, M.D.	Minneapolis
G. I. Badeaux, M.D.	Brainerd
J. W. Edwards, M.D.	Saint Paul
E. M. Elsey, M.D.	Glenwood
B. A. Flesche, M.D.	Lake City
G. H. Goehrs, M.D.	Saint Cloud
E. V. Goltz, M.D.	Saint Paul
Wm. V. Knoll, M.D.	Duluth
R. W. Koucky, M.D.	Minneapolis
N. C. Plimpton, Jr., M.D.	Minneapolis
R. S. Ylvisaker, M.D.	Minneapolis

FRACTURES

E. T. Evans, M.D.	Minneapolis
N. H. Baker, M.D.	Fergus Falls
W. H. Cole, M.D.	Saint Paul
B. C. Ford, M.D.	Marshall
R. K. Ghormley, M.D.	Rochester
V. P. Hauser, M.D.	Saint Paul
William McDonald, M.D.	Crookston
J. H. Moe, M.D.	Minneapolis
M. J. Nydahl, M.D.	Minneapolis
J. F. Schaefer, M.D.	Owatonna
W. A. Swedberg, M.D.	Duluth
J. A. Thabes, Jr., M.D.	Brainerd

GENERAL PRACTICE

R. H. Creighton, M.D.	Minneapolis
E. C. Bayley, M.D.	Lake City
James A. Blake, M.D.	Hopkins
R. M. Burns, M.D.	Saint Paul
Donald C. Deters, M.D.	Saint Paul
C. S. Donaldson, M.D.	Foley
R. J. Eckman, M.D.	Duluth
W. E. Hart, M.D.	Monticello
Roger G. Hassett, M.D.	Mankato
W. W. Rieke, M.D.	Wayzata
C. H. Sherman, M.D.	Bayport

HEART

(Three-year appointment)

F. J. Hirschboeck, M.D. (1954)	Duluth
J. F. Borg, M.D. (1954)	Saint Paul
J. F. Briggs, M.D. (1953)	Saint Paul
Hendrik DeKruif, M.D. (1955)	Fergus Falls
Paul F. Dwan, M.D. (1955)	Minneapolis
C. N. Hensel, M.D. (1955)	Saint Paul
M. M. Hurwitz, M.D. (1953)	Saint Paul
R. O. Sather, M.D. (1954)	Crookston
H. L. Smith, M.D. (1954)	Rochester
D. W. Wheeler, M.D. (1954)	Duluth
Asher White, M.D. (1955)	Minneapolis

HISTORICAL

Robert Rosenthal, M.D.	Saint Paul
Richard Bardon, M.D.	Duluth
W. F. Braasch, M.D.	Rochester
Carl Fritsche, M.D.	New Ulm
R. C. Hunt, M.D.	Fairmont
A. G. Liedloff, M.D.	Mankato
O. F. Mellby, M.D.	Thief River Falls
Thos. A. Peppard, M.D.	Minneapolis
G. E. Sherwood, M.D.	Kimball
A. M. Watson, M.D.	Royalton
W. E. Wilson, M.D.	Northfield

HOSPITALS AND MEDICAL EDUCATION

H. S. Diehl, M.D.	Minneapolis
T. E. Broadie, M.D.	Saint Paul
H. R. Butt, M.D.	Rochester
B. C. Ford, M.D.	Marshall
R. F. Hedin, M.D.	Red Wing
A. C. Kerkhoff, M.D.	Minneapolis
H. A. Korda, M.D.	Pelican Rapids
Arnold Larson, M.D.	Detroit Lakes
J. P. Medelman, M.D.	Saint Paul
W. H. Valentine, M.D.	Tracy
H. J. Walder, M.D.	Duluth

INDUSTRIAL HEALTH

L. S. Arling, M.D.	Minneapolis
Tracy E. Barber, Jr., M.D.	Austin
C. C. Bell, M.D.	Saint Paul
E. E. Christensen, M.D.	Winona
H. B. Clark, M.D.	Saint Cloud
Clarence Jacobson, M.D.	Chisholm
T. A. Lowe, M.D.	South Saint Paul
Robert F. McGandy, M.D.	Minneapolis
O. L. McHaffie, M.D.	Duluth
J. R. McNutt, M.D.	Duluth
John F. Shronts, M.D.	Minneapolis
H. H. Young, M.D.	Rochester
L. W. Foker, M.D.	Minneapolis

MATERNAL HEALTH

J. J. Swendson, M.D.	Saint Paul
P. N. Bray, M.D.	Duluth
C. J. Ehrenberg, M.D.	Minneapolis
O. B. Fesenmaier, M.D.	New Ulm
G. F. Hartnagel, M.D.	Red Wing
E. R. Hudec, M.D.	Echo
A. B. Hunt, M.D.	Rochester
J. L. McKelvey, M.D.	Minneapolis
W. F. Mercil, M.D.	Crookston
A. B. Rosenfield, M.D.	Minneapolis
F. L. Schade, M.D.	Worthington
F. J. Schatz, M.D.	Saint Cloud

MEDICAL TESTIMONY

E. M. Hammes, Sr., M.D.	Saint Paul
B. S. Adams, M.D.	Hibbing
Markham B. Coventry, M.D.	Rochester
Gordon MacRae, M.D.	Duluth
S. R. Maxeiner, M.D.	Minneapolis
L. H. Rutledge, M.D.	Detroit Lakes
W. G. Workman, M.D.	Tracy

MILITARY AFFAIRS

J. H. Tillisch, M.D.	Rochester
E. G. Benjamin, M.D.	Minneapolis
Floyd M. Burns, M.D.	Milan
Luther F. Davis, M.D.	Wadena
K. E. Johnson, M.D.	Duluth
Donald McCarthy, M.D.	Saint Paul
Fred H. Magney, M.D.	Duluth
N. C. Plimpton, Jr., M.D.	Minneapolis
W. P. Ritchie, M.D.	Saint Paul
Joseph M. Ryan, M.D.	Saint Paul
John T. Smiley, M.D.	Minneapolis
A. K. Stratte, M.D.	Pine City
Asher A. White, M.D.	Minneapolis

NERVOUS AND MENTAL DISEASES

W. P. Gardner, M.D.	Saint Paul
Joe R. Brown, M.D.	Rochester
S. A. Challman, M.D.	Minneapolis
R. C. Gray, M.D.	Minneapolis
B. P. Grimes, M.D.	Saint Peter
J. E. T. Haavik, M.D.	Duluth
E. M. Hammes, Jr., M.D.	Saint Paul
W. H. Hengstler, M.D.	Saint Paul
W. L. Patterson, M.D.	Fergus Falls

OPHTHALMOLOGY

T. R. Fritschie, M.D.	New Ulm
A. F. Adair, Jr., M.D.	Saint Paul
F. P. Frisch, M.D.	Willmar
H. W. Grant, M.D.	Saint Paul
E. W. Hansen, M.D.	Minneapolis
Hobart C. Johnson, M.D.	North Mankato
F. N. Knapp, M.D.	Duluth
C. L. Oppegaard, M.D.	Crookston
C. W. Rucker, M.D.	Rochester
Andrew Sinamark, M.D.	Hibbing
C. E. Stanford, M.D.	Minneapolis
W. T. Wenner, M.D.	Saint Cloud

PUBLIC HEALTH NURSING

M. McC. Fischer, M.D.	Duluth
F. S. Babb, M.D.	Saint Paul
W. C. Chambers, M.D.	Blue Earth
L. F. Davis, M.D.	Wadena
J. N. Libert, M.D.	Saint Cloud
C. E. Merkert, M.D.	Minneapolis
T. W. Stransky, M.D.	Owatonna

SCIENTIFIC ASSEMBLY

O. J. Campbell, M.D., *General Chairman*	Minneapolis
R. L. J. Kennedy, M.D.	Rochester
R. R. Rosell, *Executive Secretary*	Saint Paul

Section on Medicine

P. G. Boman, M.D., *Chairman*	Duluth
R. L. Page, M.D., *Secretary*	Saint Charles

Section on Specialties

F. L. Schade, M.D., *Chairman*	Worthington
C. A. Good, Jr., M.D., *Secretary*	Rochester

Section on Surgery

L. C. Culligan, M.D., *Chairman*	Minneapolis
C. E. Rea, M.D., *Secretary*	Saint Paul

Local Arrangements

Vernon D. E. Smith, M.D., *Chairman*	Saint Paul

SYPHILIS AND SOCIAL DISEASES

H. G. Irvine, M.D.	Minneapolis
John A. Butzer, M.D.	Mankato
W. E. Hatch, M.D.	Duluth
F. W. Lynch, M.D.	Saint Paul
H. E. Michelson, M.D.	Minneapolis
C. W. Moberg, M.D.	Detroit Lakes
P. A. O'Leary, M.D.	Rochester
J. F. Schmid, M.D.	Duluth
S. E. Sweitzer, M.D.	Minneapolis

TUBERCULOSIS

J. F. Briggs, M.D., *Chairman*	Saint Paul
J. A. Myers, M.D., *Vice Chairman*	Minneapolis
R. N. Barr, M.D.	Minneapolis
Ruth E. Boynton, M.D.	Minneapolis
F. F. Callahan, M.D.	Saint Paul
S. S. Cohen, M.D.	Oak Terrace
Coleman Connolly, M.D.	Saint Paul
D. S. Fleming, M.D.	Minneapolis
Russell H. Frost, M.D.	Oak Terrace
Robert E. Hansen, M.D.	Rochester
G. A. Hedberg, M.D.	Nopeming
Corrin H. Hodgson, M.D.	Rochester
L. S. Jordan, M.D.	Granite Falls
T. J. Kinsella, M.D.	Minneapolis
Elizabeth A. Leggett, M.D.	Bemidji
E. A. Meyerding, M.D.	Saint Paul
W. O. B. Nelson, M.D.	Fergus Falls
W. E. Peterson, M.D.	Willmar
C. G. Sheppard, M.D.	Hutchinson
S. A. Slater, M.D.	Worthington
W. H. Ude, M.D.	Minneapolis

VACCINATION AND IMMUNIZATION

R. N. Barr, M.D.	Minneapolis
E. E. Barrett, M.D.	Duluth
A. J. Chesley, M.D.	Saint Paul
W. W. Higgs, M.D.	Park Rapids
C. O. Kohlbry, M.D.	Duluth
George B. Logan, M.D.	Rochester
L. F. Richdorf, M.D.	Minneapolis
R. B. J. Schoch, M.D.	Saint Paul
C. S. Strathern, M.D.	Saint Peter
R. L. Wilder, M.D.	Minneapolis

Non-Scientific Committees

EDITING AND PUBLISHING

E. M. Hammes, Sr., M.D. (1956)	Saint Paul
P. F. Donohue, M.D. (1953)	Saint Paul
L. M. Eaton, M.D. (1954)	Rochester
J. J. Heimark, M.D. (1956)	Fairmont
Henry J. Moehring, M.D. (1957)	Duluth
C. L. Oppegaard, M.D. (1955)	Crookston
T. A. Peppard, M.D. (1957)	Minneapolis
H. A. Roust, M.D. (1953)	Montevideo
H. L. Ulrich, M.D. (1955)	Minneapolis
A. H. Wells, M.D. (1954)	Duluth

HOSPITALS AND PROFESSIONAL RELATIONS

J. Minott Stickney, Jr., M.D.	Rochester
George A. Earl, M.D.	Saint Paul
C. Allen Good, M.D.	Rochester
Kano Ikeda, M.D.	Saint Paul
F. C. Jacobson, M.D.	Duluth
T. J. Kinsella, M.D.	Minneapolis
Glenn Mouritsen, M.D.	Fergus Falls
C. G. Sheppard, M.D.	Hutchinson

INSURANCE LIAISON

Clarence Jacobson, M.D.	Chisholm
John Dordal, M.D.	Sacred Heart
P. W. Harrison, M.D.	Worthington
V. P. Hauser, M.D.	Saint Paul
Corrin Hodgson, M.D.	Rochester
Carl O. Rice, M.D.	Minneapolis
A. H. Zachman, M.D.	Melrose

INTERPROFESSIONAL RELATIONS

W. P. Gardner, M.D.	Saint Paul
M. J. Anderson, M.D.	Rochester
E. E. Christensen, M.D.	Winona
H. G. Bosland, M.D.	Willmar
C. O. Estrem, M.D.	Fergus Falls
K. R. Fawcett, M.D.	Duluth
M. I. Hauge, M.D.	Clarkfield
J. M. Hayes, M.D.	Minneapolis
R. F. Hedin, M.D.	Red Wing
Arthur Neumaier, M.D.	Glencoe

MEDICAL ECONOMICS

George Earl, M.D., *General Chairman*	Saint Paul

Executive Committee

George Earl, M.D.	Saint Paul
Harry Klein, M.D.	Duluth
F. J. Elias, M.D.	Morgan Park, Duluth
W. H. Hengstler, M.D.	Saint Paul
Clarence Jacobson, M.D.	Chisholm
C. E. Proshek, M.D.	Minneapolis
L. L. Sogge, M.D.	Windom

Editorial Committee

George Earl, M.D.	Saint Paul
W. F. Braasch, M.D.	Rochester
W. L. Patterson, M.D.	Fergus Falls
H. F. R. Plass, M.D.	Minneapolis
D. W. Wheeler, M.D.	Duluth

Medical Advisory Committee

W. H. Hengstler, M.D.	Saint Paul
P. G. E. Hoeper, M.D.	Mankato
G. C. MacRae, M.D.	Duluth
Ivar Sivertsen, M.D.	Minneapolis

Medical Ethics

Harry Klein, M.D.	Duluth
H. S. Diehl, M.D.	Minneapolis
P. E. Hermanson, M.D.	Hendricks
John E. Holt, M.D.	Saint Paul
Harry M. Weber, M.D.	Rochester

Medical Service

J. A. Bargen, M.D.	Rochester
F. S. Babb, M.D.	Saint Paul
Tague C. Chisholm, M.D.	Minneapolis
C. H. Holmstrom, M.D.	Warren
B. G. Lannin, M.D.	Saint Paul
C. B. McKaig, M.D.	Pine Island
R. A. Murray, M.D.	Hibbing
James P. O'Keefe, M.D.	Saint Cloud
George E. Penn, M.D.	Mankato
H. F. R. Plass, M.D.	Minneapolis
E. J. Simons, M.D.	Minneapolis
M. O. Wallace, M.D.	Duluth

State Health Relations

C. E. Proshek, M.D.	Minneapolis
E. C. Bayley, M.D.	Lake City
R. P. Buckley, M.D.	Duluth
C. S. Donaldson, M.D.	Foley
John Earl, M.D.	Saint Paul
J. J. Eusterman, M.D.	Mankato
Raymond J. Jackman, M.D.	Rochester
D. L. Johnson, M.D.	Little Falls
C. N. McCloud, Jr., M.D.	Saint Paul
W. S. Neff, M.D.	Virginia
John T. Pewters, M.D.	Minneapolis
Carl Simison, M.D.	Barnesville
C. E. Wilson, M.D.	Blue Earth

Membership Committee

H. F. R. Plass, M.D.	Minneapolis
H. M. Carryer, M.D.	Rochester
L. D. Hilger, M.D.	Saint Paul
P. J. Pankrantz, M.D.	Mountain Lake
M. O. Wallace, M.D.	Duluth

MINNESOTA STATE CERTIFICATION BOARD ON PUBLIC HEALTH NURSING

Mario M. Fischer, M.D.	Duluth

PUBLIC HEALTH EDUCATION

F. J. Elias, M.D., *General Chairman*	Duluth

Executive Committee

F. J. Elias, M.D.	Duluth
R. M. Burns, M.D.	Saint Paul
Haddon M. Carryer, M.D.	Rochester
C. B. Drake, M.D.	Saint Paul
L. L. Sogge, M.D.	Windom

(And Chairmen of all Scientific Committees)

Editorial

C. B. Drake, M.D.	Saint Paul
K. W. Anderson, M.D.	Minneapolis
G. W. Clifford, M.D.	Alexandria
T. J. Edwards, M.D.	Saint Paul
Gordon M. Erskine, M.D.	Grand Rapids
H. W. Schmidt, M.D.	Rochester

Radio

R. M. Burns, M.D.	Saint Paul
Elizabeth C. Bagley	Duluth
N. W. Barker, M.D.	Rochester
C. N. Harris, M.D.	Hibbing
E. A. Heiberg, M.D.	Fergus Falls
O. M. Heiberg, M.D.	Worthington
R. N. Jones, M.D.	Saint Cloud
L. R. Prins, M.D.	Albert Lea
A. A. Schmitz, M.D.	Mankato
R. H. Wilson, M.D.	Winona

Speakers' Bureau

H. M. Carryer, M.D.	Rochester
J. F. Briggs, M.D.	Saint Paul
W. D. Coventry, M.D.	Duluth
J. W. Duncan, M.D.	Moorhead
P. J. Hiniker, M.D.	Le Sueur
P. A. Lommen, M.D.	Austin
L. N. Dale, M.D.	Red Lake Falls
W. B. Wells, M.D.	Jackson
Harold E. Wilmot, M.D.	Litchfield

RURAL MEDICAL SERVICE

First District

Paul C. Leck, M.D., *Chairman*	Austin

Second District

V. W. Doman, M.D.,	Lakefield

Third District

Magnus Westby, M.D.	Madison

Fourth District

L. E. Sjostrom, M.D.	Saint Peter

Fifth District

A. K. Stratte, M.D.	Pine City

Sixth District

W. W. Rieke, M.D.	Wayzata

Seventh District

D. L. Johnson, M.D.	Little Falls

Eighth District

C. W. Jacobson, M.D.	Breckenridge

Ninth District

J. K. Butler, M.D.	Cloquet

UNIVERSITY RELATIONS

R. L. J. Kennedy, M.D., *Chairman*	Rochester
O. J. Campbell, M.D.	Minneapolis
R. H. Creighton, M.D.†	Minneapolis
F. J. Elias, M.D.	Morgan Park, Duluth
E. M. Hammes, Sr., M.D.	Saint Paul

VETERANS MEDICAL SERVICE

R. H. Creighton, M.D.	Minneapolis
S. H. Boyer, Jr., M.D.	Duluth
C. J. Fritsche, M.D.	New Ulm
W. P. Ritchie, M.D.	Saint Paul
C. A. Wilmot, M.D.	Litchfield

---

†Represents General Practitioners.

Apresoline T. M.

Hydrochloride
(brand of hydralazine hydrochloride)

for Control of Hypertension

FOR better individualization of dosage with Apresoline, a new, 10-mg. tablet has been added to the 25-mg. and 50-mg. potencies.

Apresoline is a relatively safe, *single* antihypertensive drug with minimal side effects, providing benefits in many cases—complete control in some. It is recommended that Apresoline be used in severe hypertension and in those mild hypertensive patients who have not been adequately controlled by conventional regimens (diet, mild sedation, rest, etc.). The following considerations are important:

Effective in essential hypertension with relatively fixed levels, early malignant hypertension, toxemias of pregnancy, and acute glomerulonephritis.

Induces gradual and sustained reduction of blood pressure with no dangerous, abrupt fall on oral administration.

Affords uniform rate of absorption and marked antihypertensive effectiveness.

Increases renal plasma flow in marked contrast to the decrease associated with certain other hypotensive drugs.

Produces significant relaxation of cerebral vascular tone without decrease in cerebral blood flow.

Side effects are minimal and often disappear as therapy is continued.

Complete information regarding manner of use and clinical application available on request.

Ciba
Ciba Pharmaceutical Products, Inc., Summit, New Jersey

2/1884M

tHis *is* A Miserable Look'ing həad

HERE

LIES

PRINTER

JONES

If it's the printer's fault he ought to be shot.

But looking at it from another angle perhaps it points to a moral.

Maybe it is like a lot of businesses where all the stress is on selling . . . and the collection of accounts, so necessary for sound progress, takes a back seat.

Are your affairs run along these lines . . . with volume the goal and collections secondary? If it is then you need to change your policy.

TO CHANGE YOUR POLICY USE THE PROFESSIONAL CREDIT PROTECTIVE BUREAU

The Professional Credit Protective Bureau is collecting hundreds of past due accounts for dental and medical men.

The Professional Credit Protective Bureau is one collection organization that sees that the patient pays direct to the supplier of medical services. In other words you PAY THE COLLECTION ORGANIZATION AFTER YOUR PATIENT HAS PAID YOU and neither you nor the debtor is embarrassed.

More than 50 leading trade associations . . . including many medical and dental organizations . . . are using this service as part of their service to members.

It will pay you to investigate this tried and true system. Use the attached coupon.

Professional Credit Protective Bureau
724 Metropolitan Bldg., Dept. MM 1-53
Minneapolis 1, Minn.

Please send me full details on the operation of your collection service.

Name ....

Address ....

City .... State ....

Division of
The I.C. System
724 Metropolitan Bldg.
Minneapolis 1, Minn.

CREDIT ASSURANCE · CREDIT ANALYSTS · INVESTIGATIONS OF CREDIT STANDING · SPECIAL CREDIT REPORTS
AFFILIATED WITH
I.C. SYSTEM
REPRESENTATIVES THROUGHOUT UNITED STATES AND CANADA

still winning new friends

right through the menopause

on oral estrogen therapy that imparts no odor or after-odor, no taste or after-taste

YOUR prudent and assuring explanations will help—clearing away the jungle of her doubts and fears. Then SULESTREX will help—in controlling the physical symptoms of the climacteric.

Years of search have given you SULESTREX—an odorless, absolutely pure, crystalline estrogen, chemically standardized for unvarying hormonal activity. Unexcelled—therapeutically *and* esthetically—these tiny uncoated tablets will never insult the breath or perspiration, never annoy with "after-taste."

A new report by Reich and associates[1] confirms and extends his conclusions from his pilot study[2]...

"*Piperazine estrone sulfate* (SULESTREX) *is a clinically effective oral estrogenic substance, easy to administer and extremely well tolerated. Its action is accompanied with an amazingly low incidence of side reactions.*"

175 patients were included in this latest study, 50 of whom received therapy to relieve postpartum breast engorgement.

Make your own test—on your next menopausal patient. One trial will give impressive argument for this newest advance in oral estrogen therapy. SULESTREX is available in 0.75-, 1.5-, and 3-mg. grooved tablets.

Sulestrex®

piperazine tablets

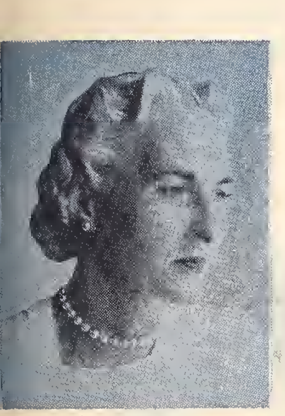
(PIPERAZINE ESTRONE SULFATE, ABBOTT)

Abbott

1. Reich, W. J., et al. (1952), A Recent Advance in Estrogen Therapy. II. Amer. J. Obst. & Gynec., 64:174, July. 2. Reich, W. J., et al. (1951), A Recent Advance in Estrogen Therapy. I. Amer. J. Obst. & Gynec., 62:427, August.

1-81

"particularly useful...
for the routine therapy
of the
menopause"[1]



ESTINYL

ESTINYL® Tablets alleviate menopausal symptoms rapidly and smoothly in very small doses. A derivative of estradiol, ESTINYL (ethinyl estradiol) produces the sense of well-being characteristic of therapy with natural estrogens.

Tablets of 0.02, 0.05, and 0.5 mg.

1. Perloff, W. M.: Am. J. Obst. & Gynec. *58*:684, 1949.

Schering CORPORATION
BLOOMFIELD, N. J.

ESTINYL

SCHERING

For Your Security and Peace of Mind

A Disability Life Income Program for Eligible Members of your Profession

Lifetime Protection
for both
Sickness & Accidents

A SILENT PARTNER . . . Continental's Companion Policies

ACCIDENT AND CONFINING SICKNESS

Pays $ 400	Monthly Benefits first 2 years ($200 1st mo.) and
$ 300	Monthly Benefits thereafter for Life.
Pays $ 600	Additional Monthly Benefits First 3 Months for Hospital Disability.
Pays $ 7,500	Accidental Death Benefits, $12,500 Double Indemnity.
Pays $10,000	Loss of Hands, Feet or Eyes, $15,000 Double Indemnity (or)
$ 5,000	Cash, & $400 monthly first 2 years, $300 monthly thereafter.

Adjusted benefits for disabilities occurring after age 60.

SPECIAL FEATURES

No Cancellation Clause,—Standard Provision 16

No Terminating Age,—Standard Provision 20

No increase in Premium,—Once Policy is Issued

Grace Period 15 Days

Non Pro-Rating,—Standard Provision 17

Non-Assessable,—No Contingent Liability

Non-Aggregate,—Previous Claims Paid do not limit Company's Liability

Unusually Complete Protection

- ★ Pays Monthly Benefits from 1st Day to Life.
- ★ Pays Benefits for both Sickness and Accident.
- ★ Pays Lifetime Benefits for Time or Specific Losses.
- ★ Pays Regular Benefits for Commercial Air Travel.
- ★ Pays Benefits for Non-Disabling Injuries.
- ★ Pays Benefits for Non-Confining Sickness.
- ★ Pays Benefits for Septic Infections.
- ★ Pays Whether or not Disability is Immediate.
- ★ Waives Premiums for Total Permanent Disability.
- ★ Renewal is guaranteed to individual active members, except for non-payment of premium, so long as the plan continues in effect for the members of your designated organization.

BOYD & BOYD, INC.
CONTINENTAL CASUALTY COMPANY
30 EAST ADAMS STREET—SUITE 1100—CHICAGO 3, ILLINOIS

Also Attractive Health With Lifetime Accident Policy I.P.-1327 For Ages 59 to 75

Name ....

Address ....

Age ....

NOTICE: —Only Companion Policies GP-1309 and IP-1308 pay the above benefits.
IMPORTANT—Permit no agent to substitute—IMPORTANT

WELCH ALLYN **ANOSCOPE**

Welch Allyn has taken the initiative in presenting to the medical profession a set of well-lighted anoscope specula as attachments to the standard battery handle. The tapered obturators and specula are so designed that they can be inserted without discomfort. The specula are all interchangeable on the same light carrier and can be readily detached for sterilization. The offset obturator handle ring facilitates insertion and allows the doctor to manipulate the anoscope with one hand, leaving the other free for treatment. Shadow-free and brilliant illumination is provided by the regular WACO No. 2 lamp. These specula are available in small, medium and large sizes with apertures of 14 mm., 19 mm, and 22 mm., respectively.

WELCH ALLYN
DIAGNOSTIC SET

Providing the general practitioner as well as the specialist with a set to completely cover diagnostic or operating procedure, this set contains the No. 110 ophthalmoscope, No. 216 operating otoscope, and a set of new Nylon specula.

Sets are provided with either the large, medium, or penlite-size handle.

The No. 110 Ophthalmoscope is a May type head constructed with a prefocused optical system which makes it unnecessary to adjust the instrument for clear focus. It is also provided with a patented rotatable unit containing standard, pin hole, and slit apertures, as well as "white line" grid and red free filter. The pin hole aperture provides a constricted spot of light permitting examination through small, undilated pupils. The slit aperture assists in estimating the level of various areas of the retina. The red free filter provides a contrast between the blood vessels and their background. The "white line" grid can be used to determine size and locate accurately certain lesions observed.

The No. 218 Otoscope has a patented rotatable speculum holder providing greater operating space. No set screw adjustments are necessary and prefocused Waco bright Light lamps provide abundant allumination at the distal end of the speculum. With direct illumination there is no light loss from prisms or projection lenses.

Send for Welch Allyn Catalog M-153a

PHYSICIANS AND HOSPITALS SUPPLY CO., Inc.
1400 HARMON PLACE, MINNEAPOLIS 3, MINNESOTA

"PREMARIN"®

Highly effective · Well tolerated · Imparts a feeling of well-being

"PREMARIN"

The menopausal patient
welcomes the sense of well-being
imparted by "Premarin."

"PREMARIN"

Estrogenic Substances (water-soluble)

"PREMARIN"

ACCEPTED

also known as Conjugated Estrogens (equine)

"PREMARIN"

5209

Ayerst®

AYERST, McKENNA & HARRISON Limited · New York, N. Y. · Montreal, Canada

Salt is what makes things taste bad when it isn't in them.*

Most people find foods unappealing and insipid without salt. Therefore, when salt restriction is indicated, the patient must be impressed with the importance of a salt-free diet and must adhere faithfully to a rigid regimen. "With the development of such preparations as Neocurtasal . . . the problem of palatability and a salty taste has been fairly well solved . . ."[1]

Neocurtasal®

"... trustworthy nonsodium-containing salt substitute"[2]

—lends the desired salty flavor to foodstuffs, and can be used in all salt-free and low sodium diets.

CONSTITUENTS: Potassium chloride, ammonium chloride, potassium formate, calcium formate, magnesium citrate and starch.

and

NEOCURTASAL
Iodized
(contains potassium iodide 0.01%)

Neocurtasal, trademark reg. U. S. & Canada.

Neocurtasal looks and pours like table salt and may be used in the same manner.

Both available in 2 oz. shakers and 8 oz. bottles.

Winthrop-Stearns INC.
NEW YORK 18, N. Y. WINDSOR, ONT.

---

1. Merryman, M. P.: The Use of the Low Sodium Diet. *South Dakota Jour. Med. & Pharm.*, 2:57, Feb., 1949.
2. Heller, E. M.: The Treatment of Essential Hypertension. *Canad. Med. Assn. Jour.*, 61:293, Sept., 1949.

*Author unidentified. From Mencken, H. L.: A New Dictionary of Quotations. New York, Alfred A. Knopf, 1942, p. 1057.

PROOF WITH ONE PUFF?

ESTABLISHED — OVER 100 YEARS
PHILIP MORRIS & Co. LTD. INC.
SPECIAL BLEND
MADE IN U.S.A.
PHILIP MORRIS

So distinct is the difference between Philip Morris and *any* other leading brand, that we believe you will notice it with a single puff. Won't you try this simple test, Doctor, and see?

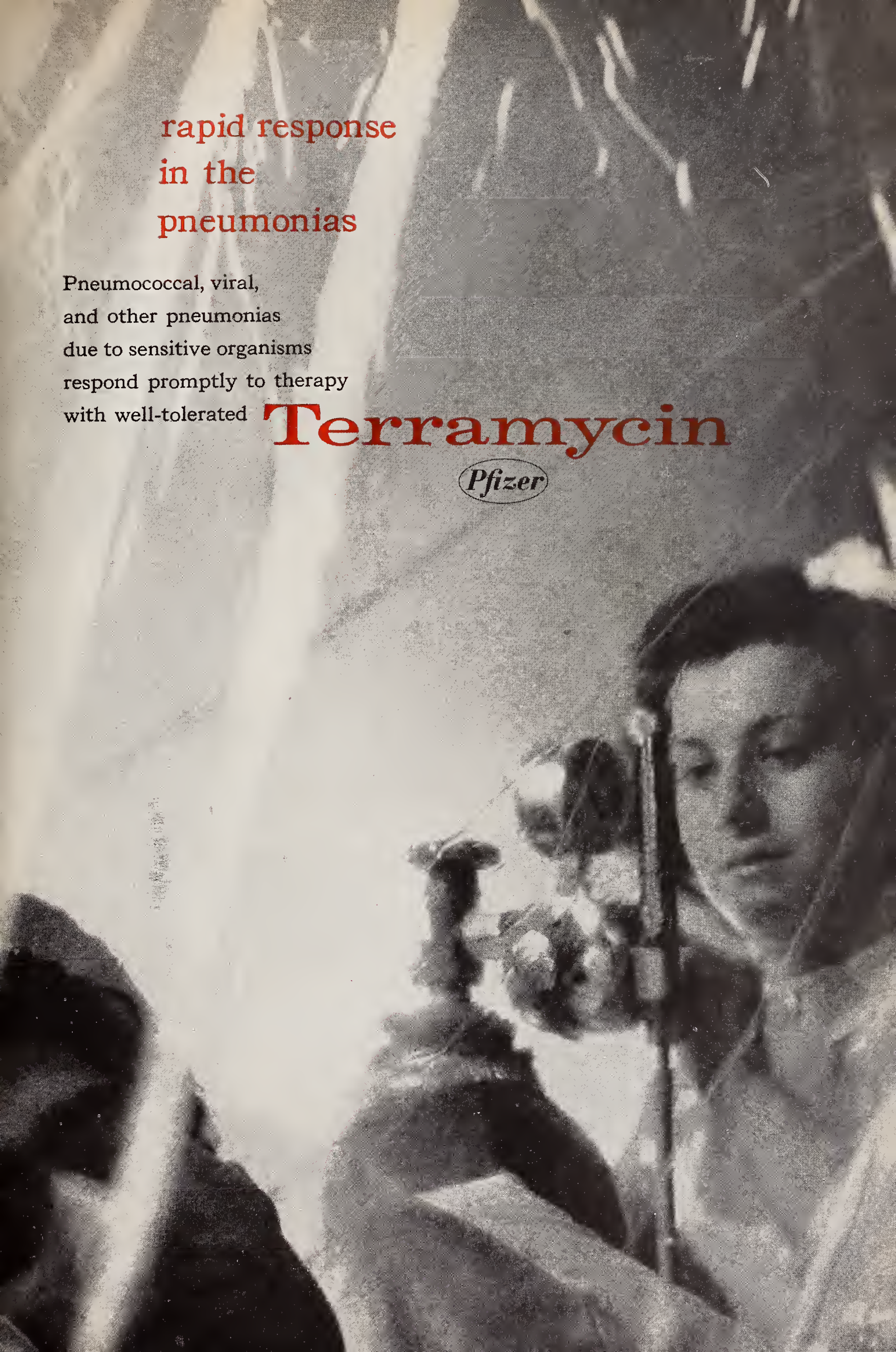
Take a PHILIP MORRIS and any other cigarette

1. Light up either one first. Take a puff—get a good mouthful of smoke—and s-l-o-w-l-y let the smoke come directly through your nose.
2. Now, do exactly the same thing with the other cigarette.

You will notice a distinct difference between PHILIP MORRIS and any other leading brand.

Philip Morris

Philip Morris & Co., Ltd., Inc., 100 Park Avenue, New York 17, N. Y.



rapid response
in the
pneumonias

Pneumococcal, viral,
and other pneumonias
due to sensitive organisms
respond promptly to therapy
with well-tolerated **Terramycin**

Pfizer

HOSPITAL SPEED and SAFETY for the PRIVATE OFFICE

Autoclave Sterilization—Always the Safest—
Now the Fastest—with the

NEW PELTON FL-2

Reduces minutes to seconds between consecutive sterilizing periods.

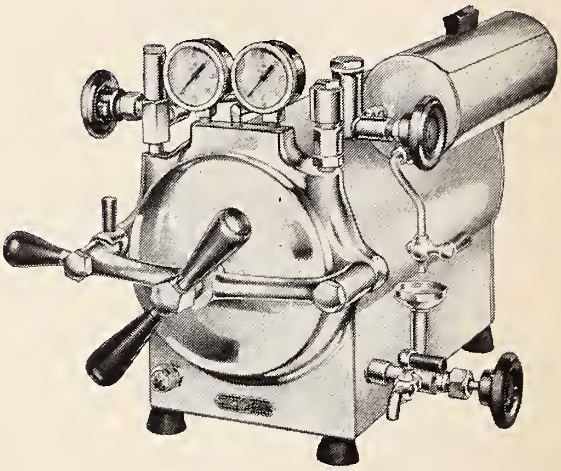
No more waiting periods for the necessary pressure and temperature.

No more wasted time.

No more watching gauges.

Applying the principles of steam heated Hospital Sterilizers, the FL-2 Autoclave now brings to the private office a self-contained unit which produces and stores steam under pressure.

Price—**$250.00**



(Write for literature or see our representative)

C. F. ANDERSON CO., Inc.
MINNEAPOLIS 2, MINN.

ACCIDENT • HOSPITAL • SICKNESS

INSURANCE

For Physicians, Surgeons, Dentists Exclusively

ALL PREMIUMS COME FROM
PHYSICIANS SURGEONS DENTISTS
ALL CLAIMS GO TO

$5,000 accidental death Quarterly $8.00 **$25 weekly indemnity, accident and sickness**	**$15,000 accidental death Quarterly $24.00** **$75 weekly indemnity, accident and sickness**
$10,000 accidental death Quarterly $16.00 **$50 weekly indemnity, accident and sickness**	**$20,000 accidental death Quarterly $32.00** **$100 weekly indemnity, accident and sickness**

COST HAS NEVER EXCEEDED AMOUNTS SHOWN

ALSO HOSPITAL INSURANCE

	Single	Double	Triple	Quadruple
60 days in Hospital	5.00 per day	10.00 per day	15.00 per day	20.00 per day
30 days of Nurse at Home	5.00 per day	10.00 per day	15.00 per day	20.00 per day
Laboratory Fees in Hospital	5.00	10.00	15.00	20.00
Operating Room in Hospital	10.00	20.00	30.00	40.00
Anesthetic in Hospital	10.00	20.00	30.00	40.00
X-Ray in Hospital	10.00	20.00	30.00	40.00
Medicines in Hospital	10.00	20.00	30.00	40.00
Ambulance to or from Hospital	10.00	20.00	30.00	40.00
COSTS (Quarterly)				
Adult	2.50	5.00	7.50	10.00
Child to age 19	1.50	3.00	4.50	6.00
Child over age 19	2.50	5.00	7.50	10.00

$4,000,000.00
INVESTED ASSETS

PHYSICIANS CASUALTY ASSOCIATION
PHYSICIANS HEALTH ASSOCIATION

$18,900,000.00
PAID FOR CLAIMS

50 years under the same management
400 First National Bank Building
Omaha 2, Nebraska

$200,000.00 deposited with State of Nebraska for protection of our members

Mothers will thank you

Swallowed Whole

Chewed
Or in Food Or Liquid

Dissolved on Tongue

NEW FLAVORED

CHILDREN'S SIZE

BAYER ASPIRIN

We will be pleased to send samples on request

THE BAYER COMPANY DIVISION of Sterling Drug Inc.
1450 Broadway, New York 18, N. Y.

FLAVORED
Children's Size
BAYER
ASPIRIN
BAYER
Genuine
24 TABLETS
2½ gr. ea.
PRICE 15¢

- The Best Tasting Aspirin You Can Prescribe.
- The Flavor Remains Stable Down to the Last Tablet in the Bottle.
- 24 Tablet Bottle . . . 2½ gr. each 15¢

2½ gr. ⇨ 1¼ gr.

Grooved Tablets —
Easily Halved.

the new

WELL-TOLERATED
wide-range antibiotic

'Ilotycin' is a powerful antibacterial of proved effectiveness* in the treatment of infections due to:

ORGANISMS	INFECTIONS
1. Staphylococci	Bacteremia, meningitis, pneumonia, osteomyelitis
2. Hemolytic streptococci	Cellulitis, erysipelas, peritonsillar abscess, pharyngitis, pneumonia, scarlet fever, septic sore throat, tonsillitis, wound infections
3. Pneumococci	Empyema, lobar pneumonia
4. Corynebacterium diphtheriae	Diphtheria carriers
5. Nonhemolytic streptococci	Some cases of endocarditis, genito-urinary tract infections

*References

1. Heilman, F. R., Herrell, W. E., Wellman, W. E., and Geraci, J. E.: Some Laboratory and Clinical Observations on a New Antibiotic, Erythromycin ('Ilotycin'), Proc. Staff Meet., Mayo Clin., 27:285 (July 16), 1952. 2. Haight, T. H., and Finland, M.: Laboratory and Clinical Studies on Erythromycin, New England J. Med., 247:227 (August 14), 1952. 3. Smith, J. W., Dyke, R. W., and Griffith, R. S.: Erythromycin: Studies on Absorption Following Oral Administration and on Treatment of 33 Patients, to be published. 4. Spink, W. W.: Personal communications. 5. Romansky, M. J.: Personal communications.

Lilly

ILOTYCIN

(ERYTHROMYCIN, LILLY)

DOSAGE: Adults—Total daily doses of 400 to 2,000 mg. are recommended, depending on the type and severity of the infection. Lobar pneumonia, bronchopneumonia, and some of the milder types of respiratory infections caused by organisms susceptible to 'Ilotycin' have consistently responded to doses of 100 mg. every four to six hours. For other infections, larger doses of 300 to 500 mg. every six to eight hours should be employed.

Children—6 to 8 mg. per Kg. of body weight every six hours. Therapy should be continued for at least forty-eight hours after the temperature has returned to normal and acute symptoms have subsided.

Available in 100-mg. specially coated tablets in bottles of 36.

Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 36 January, 1953 Number 1

THE MEDICAL SCHOOL IN RELATION TO MEDICAL PRACTICE IN THE STATE

CHARLES G. SHEPPARD, M.D.
Hutchinson, Minnesota

THE invitation to speak to you on this occasion was most unexpected and deeply appreciated. It never occurred to me at any time since I left this medical school seventeen years ago that I should ever return to speak to any of you who were my own professors in medical education. I feel very humble because of it.

However, over the past several years, during which time it has been my privilege to serve as an officer of the Minnesota State Medical Association, I have been cognizant of the fact that there has been a certain schism between the practicing physician, be he a specialist or general practitioner, and the medical school staff and faculty. The impression has deepened that something must be done to close this breech, and it seems that this which I say today should be but the first of many similar efforts by others interested in the problems to accomplish that purpose. I believe that the differences of opinion exist because of a lack of complete understanding of mutual problems.

In beginning this discussion it might be well to review for you briefly the organized medical activities as they exist outside of the University Hospitals. Some of you know this already and others may not. There are 3,896 licensed physicians in Minnesota. An additional 2,000 are licensed in Minnesota, but do not live in the state. Of the physicians residing in Minnesota 3,713 are engaged in active practice and over 3,000 of these belong to organized medicine, that is, are members of their County Medical Society and hence the MSMA and AMA. The basic unit of the MSMA is the County Medical Society. There are thirty-two of these in Minnesota, ranging from small single county societies with membership of as few as seventeen to larger single county or multi-county societies, the largest of which is the Hennepin County society. Each medical society is autonomous, except that its efforts must be within the Code of Ethics of the MSMA and AMA and its Constitution and Bylaws must parallel those of the state and national organizations.

Activities on a statewide basis are conducted by representatives of each county society who are elected as delegates to the House of Delegates, one for each fifty or fewer members of each of the component societies. There are seventy-seven delegates and seventy-seven alternates elected to the House each year. The House of Delegates in turn elects its own officers who are the President of MSMA, First and Second Vice Presidents, Secretary, Treasurer, Speaker, and Vice Speaker. The House of Delegates meets annually or on special occasions, as required, to transact the business of the organization, accept or reject reports of the numerous committees and make whatever recommendations it wishes to be carried out.

Also there are nine councilor districts into which the state is divided, and each councilor district nominates its own councilor to the House of Delegates who then, when elected, serves as the Councilor of the MSMA to conduct the affairs of the association between sessions of the House. This council meets each quarter and sometimes oftener and considers any situations which arise on which it feels it can pass without consulting the House of Delegates. It is then, in effect, the interim governing body of the association, and has its own chairman, executive secretary and le-

---

Read at the Staff Meeting of the University of Minnesota Hospitals, October 31, 1951. The address appeared in *The Bulletin* of the University of Minnesota Hospitals and Minnesota Medical Foundation, 24:115 (Oct. 31) 1952.

gal counsel. There are committees of the Council itself as well as about fifty Committees for the Association as a whole, who deal with all phases of medical economics and practice. These committees report annually to this House of Delegates, or in the interim to the Council. The Council makes major decisions of policy, and also makes recommendations to the House of Delegates which may be accepted or rejected.

Now the attitude of the overwhelming majority of doctors in the practice of medicine in Minnesota is in favor of private enterprise, and this in turn is reflected in these decisions in the House of Delegates. To witness this let me call your attention to the recent request by the House of Delegates for an evaluation of your cancer detection center. It was felt that certain members of your group had been using this center to further their own private practices, and it was resented and questioned. I haven't seen the report from the committee that was appointed to evaluate the center, if there has been one written, but I have read Dr. Diehl's statement of policy which came out recently, which I favor highly, and if carried out by your people here should prevent any further such criticism along this line.

The majority of doctors in Minnesota are engaged in general practice. In 1943, for instance, there were 1,800 of them as compared to 958 specialists. There has been considerable criticism of the attitude of certain people on your staff and faculty by those engaged in general practice because of the belittling attitude some of them have taken toward those in general practice. I have been told by some of the students that there was much discouragement for them to enter into general practice with the advice that they had much better go into one of the specialties. This attitude I deplore, first because I am a general practitioner, and secondly, because I firmly believe that a well trained general practitioner is capable of caring for 80 to 85 per cent of all illnesses, but must have the specialist's help for the solution to the other 15 to 20 per cent of the problems which confront him.

Fortunately there has been somewhat of a change in attitude in more recent years, so that more of the graduates coming out today are willing to go into general practice than was true 5 to 8 years ago when about 85 per cent of them were going into specialties. I will grant that medicine is becoming more and more complex, and because of this more and more specialties are developing. There is still, however, the fundamental art of the practice of medicine which must not be lost in the maze of complicated laboratory procedures and which can be taught to any alert medical student. Perhaps this art of the practice of medicine is being neglected somewhat here in the medical school. I have sensed that at least some of the recent medical students felt that their own undergraduate training was being neglected here because of your extensive graduate training program, so I submit to you that your primary function should be always the instruction of the undergraduate with secondary emphasis on your graduate program. You should, in my humble opinion, gear yourselves to turn out more, not fewer, men who are properly prepared and conditioned to go into general practice, and encourage that idea with all the means at your disposal.

Teach your staff a little more of the ethics of medical practice, as they should carry it on when they are finished so that the role or opinion of the referring doctor is not belittled to the patient who comes back home at times feeling that he is being cared for by a dud or numbskull. These derogatory remarks about previous treatment accorded a patient sent to the University Hospitals have occurred too many times and should be discouraged. I realize that this same practice is followed by men in private practice as well, and I don't condone it there any more than here. But those of us who are in general practice like to feel that we are rendering a real service to our patients and not just acting as first-aid boys to the specialists, whether here or outside the University staff or faculty.

There are many specialists who are engaged in private practice outside of the regular staff and faculty of the University. I believe that some departments within the University Medical School are not making as much use of these men as they should. I believe that your visiting staff should be utilized to as great an extent as possible to give as wide a variety of views on any subject under discussion as possible. In medicine there are usually several ways of accomplishing good results in any given patient. It is these different approaches to the solution of any patient's problem which should be brought out, rather than the teaching of one view only, as might be the case if a visiting staff member's advice and consultation are not sought. There may even be times when the visiting staff opinion is superior to that of the men on the full time University staff.

Here at the University Hospitals, where you have every aid to diagnosis at hand, the temptation is to utilize all these aids as much as possible. I believe there is a tendency to forget that all these things are not going to be available at a moment's notice to the man going out to practice among the people of rural America. That is why I would have you teach him how he can best make some of the more common diagnoses with a minimum rather than a maximum of laboratory aids; how he can use his eyes, ears, head, and hands to the greatest advantage. In other words, I would have you emphasize more the art of practice, as I have said earlier. I do not mean by this statement to de-emphasize the role of the laboratory, because certainly we could not get along without it.

I believe, too, that it would be advisable for the heads of departments, as well as those on your faculty of lesser rank to attend these rural seminars as frequently as possible. By doing so they can see the existing facilities with which medicine is practiced outside of the medical school and can meet the practitioners of the state, talk with them, and understand their problems better. I think your understanding of our problems, and, in turn, our understanding of yours would be increased tremendously. We might even give you some ideas for research problems which would be more practically profitable than some of those now engaged in. At the same time we certainly don't want to discourage any real basic research.

All along the line in medical school education, both graduate and undergraduate, the role of the doctor in his community should be emphasized. Because the physician entering into private practice in a community is at least as well educated, if not better educated than most others in his community, it behooves him to be of as great service as possible, even beyond his contribution to his community's health. The old time doctor was placed on a pedestal by his community, and if he behaved himself, was kept there, aloof to public activities. That day has gone, and he must enter into general community life as much as his time will allow, and many times at some considerable personal sacrifice. He has an excellent opportunity to assist in the fight against "creeping socialism," and should so do.

From what I have seen and heard, there is too much advocacy of a socialized system from some elements within the faculty itself, and most of this stems from the fact that many who so believe have never been in private practice, or who have made failures of their efforts at it, and so turn to maligning it in favor of the completely salaried practice of medicine for all. I am convinced that the great majority of your staff and faculty believe in private enterprise, but even one or two in a group as large as yours, if they speak loudly enough, can leave the impression with those outside that the majority is favoring a socialized regime. At least the seed of doubt is planted, and this is not desirable. I believe that as new members are added to your faculty, you should take in those who have had a successful private practice or at least become thoroughly acquainted with their philosophy of practice and exempt those who favor the socialistic setup. More of the graduates come out now with the idea that socialization of medicine and eventually of all walks of life is inevitable. These words have been put in their mouths by the subtle attitude of the socializer, who is patient, bides his time, and advances his position little by little as is witnessed by the changes in our own life in the past twenty years. All of Norman Thomas' Socialist platform of 1936 is now public law, due in part to our acceptance of the slogan "It's inevitable, so why fight it?"

The fight against socialism should be the fiercest fight in the medical school, as we are the first, or among the first, that the government planners would bring to heel. There are many problems as far as medical care costs that have not been solved, but given time and applied energy to the problems, they are and will be solved without excessive government intervention.

Now to another phase of undergraduate training which I think has been neglected. I believe it would be possible, probably in the premedical school course somewhere, to require a short course in business, especially as it is related to medicine with emphasis on methods of bookkeeping, medical records, et cetera, as well as a short course in legal medicine. There is no time for these subjects in the medical school, although there may be some time available during the senior year for discussion on fees in general.

Another suggestion which would be of inestimable value to the applicant for our medical school would be to acknowledge the names of the candidates who are acceptable sometime between December and April preceding the fall of admission.

There has been considerable criticism of waiting until the last minute to announce the names of these men, at times severely handicapping that individual who may have his application in here and desires to go here above all other places, but who, to play it safe, has his application in at other medical schools in the country.

The subject of training of auxiliary medical personnel has been a sore point for many years in Minnesota. I refer in particular to the nurses training program, as laid down by the Nurses Training school and the American Nurses Association, in which people in our own state play important roles. I realize that this is a very tender subject, but that only increases its importance in solution. The nurse shortage has not been solved. I have had the privilege of sitting in on the discussion of the MSMA Committee on Nursing, but have not had the opportunity of hearing the other side of the picture. From what I can determine, this committee is completely frustrated in its efforts to establish nurses training centers in small hospitals throughout the state, and unfortunately I am not familiar enough with all of their proposals to discuss the entire program as intelligently as I should. I do know, however, that an apparent stalemate has been reached between the two groups.

As I understand the situation, the doctors in some of our small communities feel that they and their nursing staffs are quite capable of teaching a girl the fundamentals of bedside care of patients in homes or hospitals, while those in charge of setting up nurses training programs are keeping the standards of such instruction unnecessarily high, and are thus blocking the efforts of the doctors to train more badly needed nurses. Now there must be a solution to this problem. The doctors on the State Association committee have worked long and hard in an effort to solve these problems, but have arrived nowhere. When the subject is mentioned to them now, many of them become positively apoplectic during the ensuing discussion. With all due respect to them and their long hours and days of effort to solve this problem, it might be better if a new group would tackle the problem. Heretofore no one has had the courage to ask them to relinquish their committee appointment and let a new group be appointed in an effort to relieve the obstruction. I do not for one minute believe it is all the doctors' fault, however, and would suggest that perhaps it is time for the nurses to reassess their position with the object in view of doing the greatest good for the community, even at some sacrifice of position or standard.

Don't misunderstand me. I appreciate fully the hard battle which the nurse has made to attain her present position, but I don't like to see her become only a supervisor of others' duties when her primary function is patient care. It may well be that small hospitals are not staffed nor could afford to be staffed to produce R.N.'s, but more help for bedside care must be obtained in some way, and it is up to the nurses to lead the way, rather than to be obstructionistic in their attitude. I'm probably pulling my own house and the nurses home down on my head, but I am impelled to speak frankly on this subject. Perhaps the University Nursing School should concentrate on producing teachers of nurses who would in turn be qualified to go out and supervise nurses training schools throughout the state to try to meet the need. There are, I am sure, a great many facets of this problem which I have not even touched, but I believe a start should be made to rectify existing conditions.

The other medical auxiliary groups which are in short supply are laboratory and x-ray technicians. The teaching is such at most schools here in Minnesota that a girl gets either laboratory training or x-ray training, but not both. Most small hospitals or doctors' offices cannot afford to hire two girls, one to do nothing but laboratory work and the other to do nothing but x-ray work. The two must be combined, and if possible in a shorter course than is now available. To become a registered technician now requires four to five years, I believe, including two years of academic training, which could possibly be eliminated in order to save time and expense of training and thus increase the supply of available people.

Many small hospitals find it impossible to obtain registered technicians because of the great demand, and hence have to rely upon graduates of so-called commercial schools of medical technology, who are not really thoroughly trained in laboratory and x-ray procedures. If the girl is intelligent, she can complete her training under the physician's guidance to a certain degree, but this is not the best way by all means. Some way must be found to increase the supply of competent technicians, either by establishing another shorter course here at the University or its affiliated hospitals, such as Ancker, General, or Miller, or by working out some arrangement with these commercial schools, so that their girls receive more adequate training. You can't afford to be stuffy about them, and not recognize and offer to assist them, since we in rural areas have to accept them whether we like it or not. Actually we find most of them quite satisfactory for many procedures. By having more and better training schools, and encouraging these graduates to go into rural communities, the practice of medicine in rural Minnesota could be improved.

The same thing might be said of nurse anesthetists, although here, I realize, a more thorough fundamental training in some aspects of medicine is really necessary. We have a most conscientious nurse-anesthetist in our hospital and are able to do many more operative procedures at home than we could previously.

A source of great irritation to the practicing physician who refers patients to the University hospital for care has been the great delay in getting out reports to him about the patient who has been discharged. This has improved some in the past year but still needs to be worked on a great deal. Such prompt reporting of diagnosis, treatment advised, et cetera, is absolutely essential to the family physician who must carry on after such patient's discharge, and will improve the University staff relationship with private practitioners immensely, as well as the family doctor's and University staff relationship with the patient, and both are of equal importance.

In my opinion, and it is shared by many others I know, the doctors of Minnesota are negligent in their financial support of the medical school. There is at hand an ideal medium for such support, the Minnesota Medical Foundation, and I would encourage all Minnesota Physicians, whether graduates of Minnesota or not is immaterial, to join and support this organization.

More scholarships are needed, and the doctors, through their medical societies and as individuals could supply all that are needed if they would. If we don't do it, the government will step in and do it for us, and we'll have no say in the matter. Research grants should be made available through the estates of deceased physicians, wherever possible, to help carry on essential work.

Almost every county society in the state carries out immunization programs in the public and parochial schools, with small fees attached to encourage preventive medicine. We in McLeod County have pooled these immunization fees into the Society's treasury and have found this to provide almost all of the money we ever need. Others could do the same if they wished, and some of this money could be used for scholarship purposes, and would certainly be a most excellent public relations maneuver.

I'm sure Dean Diehl would be very much surprised and probably even a little disappointed, if I didn't mention a favorite subject, that of preceptorship for medical students. I became interested in this subject at the time when such a high percentage of the graduating classes were going into specialties, and realized that if this trend continued we would soon have a plethora of men in the specialties. Hence, over the past three or four years I have discussed this idea with many of my colleagues throughout the state with the result that several resolutions have been passed by the House of Delegates of the State Medical Association encouraging the idea and requesting the University to look into the matter and bring about its accomplishment. My feelings about preceptorships were further strengthened after I had the privilege of discussing medical organizations with the senior medical students last spring.

I requested one of last year's seniors to give me his own criticisms of the curriculum as he experienced it. I should like to quote a part of his letter for what it might be worth.

"All in all I think that we got a pretty good all round training especially so since I have been able to compare it with some of the other training evident on our internship. I do believe that most of us sincerely regretted that our university does not have a preceptorship included in the curriculum of its medical school. Again comparing notes with the boys from Wisconsin I feel that we missed a valuable form of training for general practice. I personally feel that general practice is the only form of medicine that holds any great deal of interest for me, but I would certainly have welcomed a chance to see it in action.

"Of course I felt that there was too much stress on the unusual of medicine and not enough on the everyday problems which I would assume that one meets in a general field. While training is confined to a university hospital I do not exactly see how this can be overcome. It is entirely possible, too, that I will be glad in a few years that I trained in an institution where the stress was so placed since the rest may come easier than I now anticipate.

"There was absolutely no training in the realm of starting and handling a business. We did have some courses which were almost entirely superfluous and could easily be forgotten. I am sure that personnel is available that could enlighten us in such matters. Were I to start a practice on my own I would have almost no idea as to what equipment would be essential, what my fees should be, and other problems the answers to which might not make me a better physician, but might have a bearing on how soon I get a crippling ulcer.

"I do not feel that the criticism that we are taught to be too dependent on laboratory procedures in making a diagnosis is a very valid criticism. Only by actually seeing what certain physical signs mean in blood, urine, and chemical changes will such signs be fixed in our memory.

"These are only criticisms of the university in relation to our training for general practice, which is what I understood you to want. There are of course certain individuals on the staff who have a tendency to thumb their nose at anyone in general practice but I believe that on the whole the staff was very good in praising the general practitioner and the results which they so frequently attained under adverse conditions."

It was very encouraging to me to learn first of all that so many of the group with whom I visited intended to go into general practice, and secondly that they felt they would have been very much interested in taking a preceptorship had the opportunity been presented to them.

At this same time I was rather disturbed because of the fact that there were so many of them who felt that they were willing to go into general practice but did not wish to get out of larger urban centers. They felt that by going to Podunk Center, perhaps without a hospital, or even with a small one available within a few miles, that they would be greatly impaired in their practices, put at such a disadvantage that they did not wish to try it.

I don't know what has happened to the pioneering spirit which prompted our forefathers to settle in rural areas, where they had nothing to work with but their senses and a few meager drugs, but something of this kind must again be regained by the young man coming out into the country today.

Preceptorship, in my humble opinion, would afford those in rural practices, or even in general urban practice, to further sell the idea to these young men, so that they could go into rural areas with a great deal more confidence and willingness, after having been exposed to the practice for a period of time. They would find that perhaps they could practice medicine without all the trimmings which are sometimes desirable, but not always necessary. They would find also that where conditions did not come up to the standards which they desired to practice under, they would have the pleasure and joy of bringing them up by their own efforts, with the help of their communities.

I believe that the patient coming to the University Hospital as a part pay or county patient should receive the same consideration as any patient in a private hospital. This should certainly include a great deal of care in the ordering of x-ray and other laboratory procedures, with the idea of trimming costs whenever possible. I am sure you will agree that some of these are expensive and perhaps not altogether necessary, even if interesting. Over the last few years we have found that the boards of county commissioners are more and more willing to have us keep our county patients in local hospitals, rather than send them here, because of the increasing costs. We can keep them in most rural hospitals for far less than it costs here, and the patients themselves would rather remain nearer home.

Could we be of help to you people by sending in certain types of cases for teaching purposes? Could you send out periodic bulletins to all the state physicians with requests for certain categories of cases you would like to have sent in? We don't have any idea what your problems are. We certainly should know them, in order to be of assistance to you.

We who are out in private practice realize that you people probably have gripes about us too, and we would encourage you to be equally frank. I am convinced that by having a committee appointed from the medical school faculty and University hospital staff and a similar group from the State Medical Association, these and other problems could be worked out to the best advantage of all. Perhaps several joint committees would be necessary, one to deal with legislative matters, one with doctor-nurse-lab technicians and other auxiliary aid problems, et cetera. But let us sit down and really try to solve these problems and quit sniping at each other from across the fence.

THE CHANGING TREATMENT OF PULMONARY TUBERCULOSIS

THOMAS J. KINSELLA, M.D.
Minneapolis, Minnesota

THE TREATMENT of pulmonary tuberculosis has, over the centuries, undergone many changes and additions with the changing times. The introduction of the sanatorium treatment with prolonged rest, hygienic care and graduated exercise was a distinct advance and restored many individuals to health, particularly those with less extensive disease and without serious complications, especially large cavities. Those individuals unfortunate enough to have more extensive disease or serious complications occasionally recovered completely, but more often improved considerably and then reached a plateau beyond which they could not go without additional help.

The addition of collapse therapy measures offered renewed hope to many of the above patients. Artificial pneumothorax by Forlanini in 1882, phrenic nerve surgery by Stuertz in 1911, thoracoplasty by deC'erenville in 1885, Brauer and Friedrich in 1907, and Sauerbruch in 1909, intrapleural pneumonolysis by Jacobaeus in 1913, and extrapleural pneumonolysis by Tuffier in 1910, each adding its bit to improve the over-all picture. Thousands of patients recovered and were rehabilitated by the use of these additional weapons.

There were, however, many gaps to be filled. Tuberculosis itself frequently did not respond sufficiently to render the patient suitable for any of the collapse therapy procedures. Then, too, there was the ever-present danger of a flare-up or spread of tuberculosis following any surgical procedure, even some of rather minor nature. Wound infections and poor healing with sinus or fistula formation were to be expected if infected areas were entered. There were, likewise, shortcomings and complications of the various types of collapse therapy which had to be considered and reckoned with in the over-all picture of treatment. The frequency of clear pleural effusions and a 10 per cent chance of tuberculous empyema were expected complications of artificial pneumothorax, while a bound down lung and impaired lung function were frequent sequelae to its use and detracted from its over-all value. The complications of infection, migration, extrusion and expectoration of the various filling materials used in extrapleural pneumonolysis greatly diminished the value of this procedure. The unnecessary or unavoidable removal or impairment of lung function by the apparently simple procedure of phrenic nerve interruption not infrequently proved more of a handicap than a blessing to the patient so treated.

The occurrence of inadequate collapse, unclosed or reopened cavity, angulation and obstruction of partially stenosed bronchi and the persistence of symptoms from bronchiectasis detracted seriously from the over-all good picture resulting from thoracoplasty treatment. The unavoidable necessity of sacrificing good lung tissue in order to control a cavity, likewise proved a handicap to the patient. The complications encountered and a vivid memory of past tragedies tempered the surgeon's desire to perform more heroic procedures. Other types of thoracic surgery were developing rapidly with improvement in technique, in anesthesia, in blood replacement and in chemotherapy, but the treatment of tuberculosis seemed to have reached a standstill.

Then came the era of chemotherapy, and after it, that of the antibiotics. First, the sulfa drugs and later penicillin and others to control secondary infection and reduce the complications attendant thereon. Following this, the sulfones appeared, promin, promizole and diazone, with mild anti-tuberculosis activity *in vitro* and in experimental animals to raise the hope of the tuberculous patient who has ever been ready to grasp at straws and to accept, without hesitation, any new drug which might offer any hope of cure of his disease. The hope was short-lived, however, for it was soon found that their toxic effects, particularly upon the blood, outweighed their real therapeutic effect. Then the antibiotic streptomycin appeared with its remarkable effects on mycobacterium tuberculosis in culture and in animal experiments. It was used intensively and in large doses with good effect until its toxic effects on the vestibular portion of the eighth nerve were recognized and the efficacy and reduced toxicity of smaller doses discovered. Then, dihydrostreptomycin appeared as an apparent im-

---

Presented before the Minnesota Academy of Medicine, May 14, 1952.

provement until its toxic effect on the auditory portion of the eighth nerve became evident. In spite of these complications, marked improvement followed its use, with almost miraculous results.

The periods of treatment had been short and intensive, but soon recurrences of trouble began to appear. It was soon discovered that the mycobacterium tuberculosis was developing resistance against streptomycin, so additional chemicals were tried. Tbione (TB I) was welcomed and then PAS (para-amino salicyclic acid). These compounds, especially the latter, were an aid in the control of tuberculosis. Though less spectacular than streptomycin, they were tolerated fairly well by the patient. They were, however, far from the final answer. Many organisms also became resistant to their action, and then it was discovered that two of the substances used together had a better effect than either one alone. What was more important was that when streptomycin and PAS were used together, they could be used in smaller dosage, could be continued over much longer periods of time, and that the emergence of resistant strains of bacteria was, likewise, greatly delayed. To add to the favorable picture, another simple compound, isonicotinic acid hydrazide (INH) appeared as a cheap and readily available material with strong antituberculous properties. It was not a cure in spite of all of its favorable publicity, but was another distinct help although the organisms soon developed resistance against it. Also, it was a distinct boon to those patients who already carried streptomycin resistant organisms. It soon became evident that it, too, must be used in combination with PAS or streptomycin, or both, if delay in emergence of resistance was to be effected. Under combined therapy, many patients with very extensive tuberculosis who otherwise would never have become suitable for any type of surgery can now be successfully treated, and many of the complications previously encountered and justly feared have now been reduced to the point where they may be accepted as calculated risks.

The present treatment of tuberculosis consists of a program of bed rest plus chemotherapy planned to extend over a period of months giving streptomycin, one gram every third day, and para-amino salicylic acid, 12 grams daily, supplemented with growing infrequency by pneumoperitoneum or temporary phrenic nerve interruption. This is continued until maximum improvement has been reached with clearing of most or all of the reversible components of the disease. Surgery to eliminate cavity, inspissated cavity, caseous residues or bronchiectatic areas is then added in the hope that the patient may be able to control the smaller residues left behind and still be protected against future recurrences which so commonly come from the larger residual lesions. With the surgery completed, the patient is again returned to the sanatorium regime for a period of prolonged chemotherapy, the length of this course to be determined by his individual resistance, the extent and type of any residual tuberculosis, and his further response to therapy, as well as to the results of bacteriological studies. It must be clearly understood that no surgical procedure can remove all tuberculosis from a patient's body. Unless the patient possesses or develops resistance against the organisms with or without the help of chemotherapy, he will never be free from the danger of further trouble. Chemotherapy, under this program, has opened wide the field for more extensive and yet more conservative surgical treatment of pulmonary tuberculosis and its complications.

The thought of removal of tuberculosis, or a tuberculous focus, is not a new one. The Shakespearean "Out damned spot" of Lady Macbeth spoken in another vein might well apply to this disease. Surgeons have been doing this at a price in other portions of the body for years; the tuberculous kidney, tuberculous epididymis, tuberculous appendix and Fallopian tube, were successfuly treated by surgical removal, but not always without complications. The idea of applying such procedures to the lung were anything but new. Theodore Tuffier, in 1891, successfully carried out a resection of a tuberculous nodule from the upper lobe. Just how the lesion was diagnosed still remains a mystery for Roentgen did not discover x-ray until 1895. Subsequent attempts were not so successful.

It is not surprising, with the increasing use of resectional therapy for other types of lung disease, that, occasionally, tuberculous lesions were inadvertently resected, at times successfully, but not infrequently with unwelcome complications or poor results as illustrated by the lantern slides of a pneumonectomy patient from 1937. Others later, some of them done intentionally for known tuberculosis disease, were more fortunate as illustrated by the slides of another patient operated upon in the fall of 1940, before the advent of any chemotherapy or antibiotics, who is now alive and well some twelve years following her total pneumonectomy for tuberculosis. Failures and complications, however, were sufficiently frequent to prevent anyone in good conscience from recommending such procedures except under quite unusual circumstances.

With the advent of antibiotics and chemotherapeutic measures, which hold tuberculosis under control for a time at least, this whole picture has changed. The doors have been opened wide and definitive treatment of localized tuberculous disease or its complications is a standard part of our modern treatment of tuberculous disease of the lung. The earlier attempts were directed, naturally, at removal of disease previously treated by pneumothorax or thoracoplasty, or both, without a complete result in a patient accustomed to collapse, usually with one good lung and in good general condition except for the handicapping residue of tuberculosis. When it became evident that such lesions could be successfully treated without a prohibitive mortality or morbidity, attention was naturally directed to less extensive disease involving one lobe and as experience increased and courage and confidence developed, to segments of one lobe, isolated cavities or their caseous residues and even to smaller nodular residues of disease or bronchiectatic areas resulting from it. These are now done even in patients who are negative repeatedly upon sputum or gastric cultures for acid fast bacilli because we well realize that such reports occur commonly in patients under intensive chemotherapy. A patient may then be treated by a pneumonectomy, lobectomy, segmental or multiple segmental resection or wedge excision of a localized area or cavity. Our object, as always, is to remove, if possible, the most significant disease or its residues conserving all normal lung, if possible, so as to handicap the individual to the least possible degree. The localized resections are far more desirable functionally than many of the former collapse therapy measures because they conserve normal breathing space to a greater degree.

One of the fundamentals in this treatment and one of the safety factors for all this work lies in prompt obliteration of the pleural space about the resected area which calls for continuous removal of fluid and exudate and immediate and continued expansion of adjacent lung tissue. If it becomes evident that there will be free space left, a tailoring thoracoplasty to bring about its obliteration must be done at once if the situation has not been anticipated previously, and thoracoplasty carried out before the resection is done. Complications such as bronchial leakage, bronchial fistula, localized empyema pockets, and infected wounds do occur but they are, fortunately, not frequent and a number of them may be successfully treated. The incidence of tuberculous complications is much higher in the patients whose organisms are already resistant to the drugs used. For these patients, the administration of a new drug to which the organisms are not resistant will obviate the complications. Preliminary drug treatment to submerge the activity of the tubercle bacilli and to bring about as much healing of bronchial or pulmonary disease as possible before undertaking surgery is probably a most important factor in the avoidance of complications. The continuation of treatment following surgery for a long period of time adds much to the patient's chances of remaining well.

Under this program, it is now possible to attack bilateral disease, removing a segment or a cavity from one side and, subsequently, a segment or a lobe, or even an entire lung from the opposite side, if the patient's vital capacity and lung function will permit. Diabetic patients are all too prone to develop tuberculous disease of an extensive and bizzare type but have responded well to the above program. Likewise, also, Indians, Mexicans, Negroes, and other groups so frequently seen with extensive cavitating tuberculosis have responded favorably to this program. Even children with progressive primary or secondary tuberculosis with extensive cavitation, previously difficult or impossible to treat satisfactorily, can now be successfully treated and given a favorable outlook by local or extensive resectional therapy. This is well illustrated by the slide of an eight-year-old Indian girl from whom a large caseous tuberculous abscess was removed, and a slide of a four-year-old Indian boy subjected to total left pneumonectomy for a caseous pneumonic tuberculosis involving the whole left lung with huge cavitation, who is now in good condition a year and half following the operation.

The complications of previous disease or its treatment can, likewise, be relieved or reversed by direct surgical attack giving back to the patient function of lung tissue previously lost. A relatively normal lung trapped by the fibrin and fibrous deposits on its visceral surface following a hydrothorax or a pneumothorax of long duration may, at times, be successfully returned to improved function but probably not to its original state by the operation of decortication, peeling away the thickened layers which trapped the lung, and permitting it to expand to the chest wall. Simultaneous removal of the parietal deposits must also be done. A lung trapped by a chronic pyopneumothorax or a lung previously badly diseased by tuberculosis is a different problem again for, although at times it may be decorticated and expanded to fill the pleural space, its function already damaged by loss of capillary bed or by interstitial fibrosis, does not improve to a corresponding degree and it becomes a space-filling rather than a breathing organ. The diaphragm, its function impaired by previous temporary interruption of the phrenic nerve, or stretching by extensive pneumoperitoneum, can never be returned to its original state. While it may move, it will probably never regain its former efficiency, therefore, words of caution must be exercised in the use of these apparently simple procedures.

A good knowledge of respiratory physiology and an estimation and evaluation of lung function become of increasing importance in this field. Clinical judgment and evaluation of all available information is necessary for proper appraisal in many of these patients before subjecting them to surgical procedures. It is well to remember that the complete picture is oftentimes not expressed by laboratory units alone. To carry out an extensive surgical procedure upon a patient, leaving him a respiratory cripple, is not conferring a favor upon him because he may be better off with his disease and able to breathe and carry on than without his disease and with no exercise capacity.

Definitive surgical procedures, particularly resections of one type or another, have almost totally replaced the use of the indirect surgical procedures in vogue only a few years ago. Is it proper that this should have occurred? Thousands of patients recovered under pneumothorax and thoracoplasty therapy. Can the present procedures do as well or better? Time only will tell. There is an old axiom in treating tuberculosis that we must not evaluate our results in short periods of time as such evaluations are likely to be erroneous. The period over which the more recent types of therapy have been used is yet short, under two to three years. One can only say that the procedures appear to be logical, definitive and designed to conserve good lung. They have been done with a legitimate and very low mortality. There has been no mortality and very little morbidity from local wedge resections except where undertaken under desperation circumstances (two patients following local wedge resection of a cavity from the good lung with no function in the opposite lung). Segmental excision, likewise, carries an extremely small risk, yet a higher incidence of air leakage, hemorrhage and infection. Lobectomy has been attended by 3.36 per cent mortality and pneumonectomy by 13.17 per cent mortality over a total series back through 1937 before chemotherapy was available. The follow-up period following resection has been too short to permit any final figures. My impression is that they are very good and that the procedures are eminently satisfactory. Time only will give the final answer.

We have already seen a few patients who have developed a recurrence of tuberculosis in the same or other lobes, a few who have never converted to negative cultures, and a few who have developed bronchial fistulae, empyema, et cetera, but these have been in the small minority only. Will the future return to us more of these patients with an exacerbation of tuberculosis? I fear that it may. The earlier preoperative and postoperative drug therapy was not ideal in light of our present knowledge. Resistant organisms may still survive to plague us and the patient in the future. Do these individuals, under drug therapy, develop their own powers of resistance to the same degree that they formerly did under the older program, or have they been carried on crutches with chemotherapy for a long period to collapse in time when this support has been withdrawn? Can new drugs be developed fast enough to control the organisms as they become resistant to our present weapons? Will some of our present patients with resistant organisms infect others with organisms resistant enough so that these new patients will not respond to our present drugs? Could not a combination of some of our old with the newer therapy be used to advantage, say intensive chemotherapy of a prolonged type combined with judiciously adminis-

(Continued on Page 39)

THE PRESENT STATUS OF TUBERCULOSIS IN MINNESOTA

Beginning of Tuberculosis Control

A Preliminary Report

FRANCIS F. CALLAHAN, M.D.
Saint Paul, Minnesota

ACTIVE measures for treatment and control of tuberculosis actually began in Minnesota in the first decade of this century. The Legislature of 1901 authorized the Governor to appoint a Commission of three physicians to investigate the advisability of establishing a State Sanatorium. The Commission was composed of Dr. H. Longstreet Taylor, Dr. James L. Camp, and Dr. G. S. Wattom. A report and recommendations were made to the Legislature of 1903, and that body enacted a law authorizing the appointment of an Advisory Commission to be composed of five physicians. The members of the original Advisory Commission were: Dr. H. Longstreet Taylor, Dr. James L. Camp, Dr. G. S. Wattom, Dr. A. P. Williamson, and Dr. George B. Weiser.

The 1903 Session of the State Legislature appropriated $25,000 for the purchase of land and the construction and equipping of buildings for a State Sanatorium near Walker, Minnesota. Full power to manage, control, and govern the institution was placed under the State Board of Control, which was at that time the central social welfare agency for the state. With the approval of the Advisory Commission, the Board of Control purchased 616 acres of land at a cost of $7,565.

The original building was completed and the institution was opened to receive patients in December, 1907. The purpose of the State Sanatorium was the treatment of patients with incipient pulmonary tuberculosis who had resided in the state for at least one year prior to admission. The charge for treatment was $1.40 per day, to be paid by the patient, his relatives, or the county of residence.

County Sanatoria Established

After the opening of the State Sanatorium for the care of persons with incipient tuberculosis, the Advisory Commission developed a plan for the establishment of county tuberculosis sanatoria to isolate and treat cases of advanced tuberculosis. The Commission recommended that the larger counties build their own sanatoria and the smaller counties form districts of two or more counties to construct and operate institutions for the care of their advanced cases of tuberculosis.

This recommendation was carried out only in part. Many counties refused to join a sanatorium district and insisted on sending all of their tuberculosis patients, whether incipient or advanced, to the State Sanatorium. This necessitated additional construction at the State Sanatorium to provide units for care of all stages of tuberculosis. The counties belonging to a sanatorium district were known as "organized counties" and those sending their patients to the State Sanatorium as "unorganized counties." Through the years, the staff of the State Sanatorium has never been able to conduct a case-finding program or direct sanatorium follow-up care of their discharged patients because of the distance of the unorganized counties from the institution.

Between the years of 1912 and 1918, 14 county sanatoria were constructed and put into operation, with the state contributing 50 per cent of the cost of construction and equipment up to $50,000. Additional costs of construction and equipment since the opening of these institutions have been paid by the counties.

Originally, the cost for care at the county sanatoria averaged about $10 per week per patient, with the state contributing $5 or about 50 per cent of cost, for each county-pay patient. Through the years, as improved methods of treatment were initiated and the cost of wages, food and maintenance increased, the counties assumed the additional expense. The 1949 session of the State Legislature increased the state's contribution for the care of county-maintained patients from $5 to $7.50 per week. It is hoped that in the future the state will increase its support of county patients and return at least close to 50 per cent support with which the county institutions started.

Francis F. Callahan, M.D., is medical services chief of the Minnesota Division of Social Welfare. This agency supervises the operation of the Minnesota State Sanatorium near Walker, and the twelve county sanatoria located throughout the state.

Read at the May meeting of the Minnesota Academy of Medicine, May 14, 1952.

In 1943, the charges for county-pay patients at the State Sanatorium were revised and state aid for them was placed on the same basis as for patients of counties belonging to sanatorium districts. Since that time, a per diem rate for the State Sanatorium has been established annually on the basis of operating costs. Counties are charged the per diem rate minus the state aid of $7.50 per week.

TABLE I.

Sanatorium	Opened	Original Cost	Capacity 12-31-51	Census 12-31-51	Vacancies
Buena Vista, Wabasha	1917	$ 62,000	38	27	11
Deerwood, Deerwood	1918	72,000	Closed	3-1-51	
Fair Oaks Lodge, Wadena	1918	105,000	Closed	11-1-51	
Glen Lake, Oak Terrace (including Children's Building)	1916	100,000	592	532	60
Lake Julia, Puposky	1916	78,000	49	42	7
Mineral Springs, Cannon Falls	1915	76,000	100	84	16
Nopeming, Nopeming	1912	48,000	277	227	50
Oakland Park, Thief River Falls	1917	105,000	55	34	21
Otter Tail County, Battle Lake	1913	55,000	45	24	21
Ramsey County Pavilion (Ancker), St. Paul	1914	**	192*	200*	
Ramsey County Preventorium, St. Paul	1915	**	40	41	
Riverside, Granite Falls	1917	169,000	48	23	25
Sand Beach, Lake Park	1916	115,000	Closed	6-30-51	
Southwestern Minnesota, Worthington	1917	220,000	44	32	12
Sunnyrest, Crookston	1916	119,000	60	34	26
State Sanatorium, Ah-gwah-ching	1907	976,366	350	271	79
Indian Building		(includ	ed above)		
Anoka State Hospital—Burns Bldg.	1950	**	251	258	
Auxiliary Cottages	1950	**	150	130	20

*Figures do not include persons admitted to contagion ward of Ancker Hospital as suspects for whom diagnosis of tuberculosis has not been established.
**Figures on Ramsey County and Anoka State Hospital not available.

In addition to the public sanatoria, a few small private sanitoria operated in the state for a limited number of years. One 50-bed institution at Pokegama in Pine County was opened in 1905 and discontinued in 1943. At the present time, the only private facility of any importance for the care of tuberculosis cases is a unit at St. Mary's Hospital in Minneapolis designed for surgical and other special services for tuberculosis patients.

Other Installations

With the opening of the Veteran's Administration Hospital in Minneapolis in 1927, 200 beds were added to the total number of tuberculosis beds in Minnesota. Approximately 150 present tuberculosis patients at the Veteran's Administration Hospital are residents of Minnesota.

In 1943, a full-time tuberculosis control officer was appointed to make a survey of all of the patients in mental institutions. This survey was inaugurated because of the exceedingly high death rate from tuberculosis among the patients of Minnesota mental hospitals and the large number of cases of tuberculosis developing among employes of these hospitals. The study led to the construction in 1950 of a 252-bed modern tuberculosis unit at the Anoka State Hospital for the mentally ill. Tuberculosis patients from all mental institutions are now transferred to this unit for treatment. Two auxiliary units of approximately 75 beds each have been added to the tuberculosis unit at the Anoka State Hospital in order to accommodate all of the active and suspected cases found in the state mental institutions as a result of case-finding programs conducted in these hospitals.

The Minnesota State Department of Health has collaborated with the state and county institutions in case-finding, follow-up control on discharged patients, as well as providing necessary laboratory examinations for sanatoria with inadequate laboratory facilities. In December, 1906, a regulation of the State Board of Health requested practising physicians in the state to report all cases of active tuberculosis, but this did not become law until 1913. In 1911, the State Board of Health authorized their epidemiologists to make routine examinations of tuberculosis cases as they did for all other communicable diseases.

Control of Indian Tuberculosis

For many years, the State Board of Health has pointed out the extremely high rate of tuberculosis among Indians. Tuberculosis, at least for the past 100 years, has been the major health problem for Indians. The care of tuberculous Indians is the responsibility of the federal government.

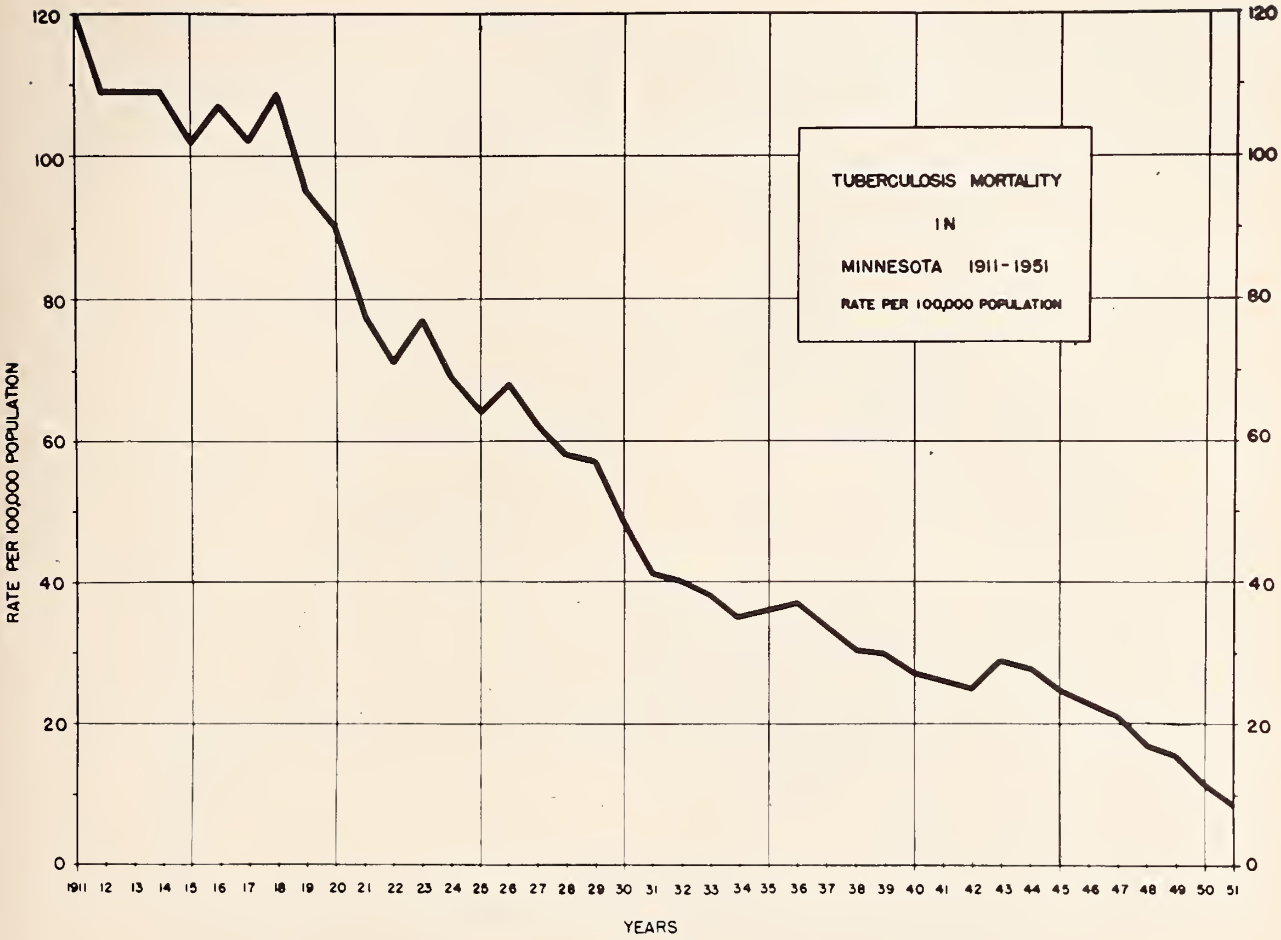


Fig. 1.

Largely through the efforts of Dr. A. J. Chesley, executive secretary of the Minnesota State Board of Health, and his co-workers, the federal government purchased land from the State Sanatorium and in 1934 constructed a 100-bed modern tuberculosis unit for the care of Indians at the State Sanatorium. This unit is operated by the Sanatorium staff and the actual cost of care given to the Indians in this institution is paid for by the federal government. The service is rendered on a contract basis, and the contract is readjusted and renewed from year to year. Since April, 1950, Out-Patient Clinics have been operated for case-finding and follow-up care of discharged sanatorium patients in the three Indian hospitals located at Cass Lake, Red Lake, and White Earth. These clinics were organized and are directed by Dr. E. A. Leggett of the State Sanatorium staff with the assistance of the medical and nursing services of the Minnesota State Department of Health and the federal Indian Medical Service.

Contributions to Case-Finding and Surgery

In reviewing the tuberculosis work since the Minnesota sanatorium plan has been in operation, it is timely to mention some of the contributions in case-finding that have come from within the state. In 1924, Dr. S. A. Slater[1] published a paper on the importance of tuberculin testing of school children in the Southwestern Minnesota Sanatorium District as a case-finding procedure. Briefly, his findings pointed to the fact that most positive reactors among school children acquired their infection either in the home or in school. This work of Dr. Slater's developed into the best case-finding program until the development of the mass x-ray screening. Even with the latter method, most tuberculosis workers feel that the tuberculin test should be used in conjunction with x-ray screening whenever possible.

In September, 1943, Dr. G. A. Hedberg and his co-workers[2] in St. Louis County started the first over-all x-ray screening program of normal citizens to be conducted in the state. The success of the St. Louis County program and that of screening programs at military induction centers led to the purchase of mobile x-ray units by the Minnesota State Department of Health. This was done with financial assistance from the U. S. Public Health Service. These units are operated throughout the state in all counties not having a mobile x-ray unit of their own. On occasion, State Board of Health and U. S. Public Health Service units have been used in counties having mobile x-ray units of their own in order to supplement county facilities in conducting massive tuberculosis surveys.

The Minnesota Public Health Association, now the Minnesota Tuberculosis and Health Association, organized in 1915, has been important in educating the public regarding tuberculosis. It has also conducted clinics in the unorganized counties in the state and has given assistance to the staffs of county sanatoria in their tuberculin testing and x-ray screening programs.

The Minnesota Trudeau Consultation Committee was organized in 1941 under the direction of Dr. A. J. Chesley. This committee visits sanatoria on invitation, offers consultative advice on the care and treatment of patients, and aids the sanatorium superintendents in procuring for their patients services that are not available in the patient's sanatorium of residence.

In order to make surgical care available to all patients in the state, a law was passed in 1941 which made it possible for a patient to be transferred to a sanatorium in the event he needed surgery which could not be performed in the sanatorium district of which he was a resident. The law provided that the cost of such surgical care would be divided equally between the state and the patient's county of residence. In 1945 the law was amended to include special diagnostic studies that were not available in the patient's home sanatorium. In January, 1951, the director of social welfare issued a regulation permitting the sanatoria providing such special services to make charges in addition to the non-resident per diem rate to cover complete surgical and special services.

Actually, the modern treatment of tuberculosis requires institutions specially equipped and staffed to care for pulmonary disease. The units of state government and medical groups especially interested in the control and treatment of tuberculosis are working together with the idea of bringing about the best over-all care of all tuberculous citizens of Minnesota as rapidly as possible.

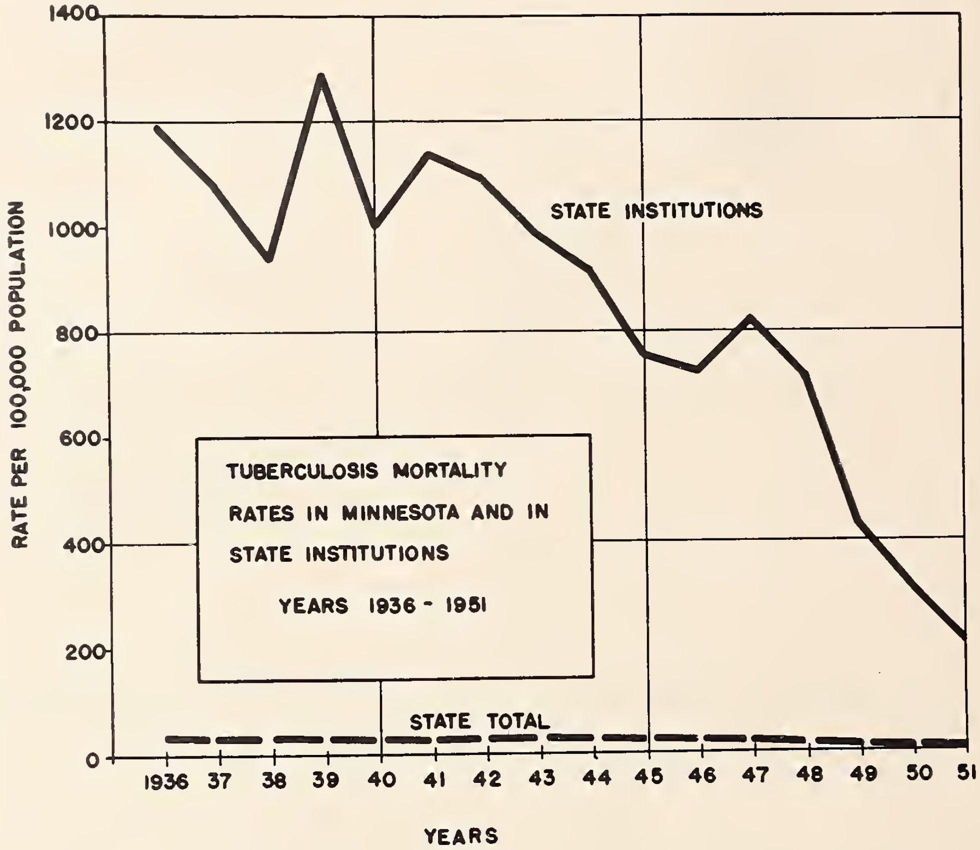


Fig. 2.

There has been a marked fall in the death rate from tuberculosis during the past five years. Undoubtedly, this has been slightly influenced by the change made in recording tuberculosis deaths by the Minnesota Department of Vital Statistics. However, along with the decrease in death rate, there has been a gradual decline in the number of patients receiving sanatorium treatment during this period.

By 1949, a large number of counties had been surveyed and it was felt that the time was right to introduce enabling legislation to discontinue or divert county sanatoria to other purposes. This enabling legislation was passed, and in 1951 Deerwood Sanatorium at Deerwood, Sand Beach Sanatorium at Lake Park, and Fair Oaks Lodge Sanatorium at Wadena were closed. At the present time, Sand Beach and Fair Oaks Lodge are operated as nursing homes for the aged and similar plans are in the making for Deerwood Sanatorium. Most of the tuberculosis patients in these institutions were transferred to the State Sanatorium and Nopeming Sanatorium, with a small number of Sand Beach patients going to Sunnyrest Sanatorium at Crookston. It is believed that it will be possible to close or divert more of the small county institutions in the near future.

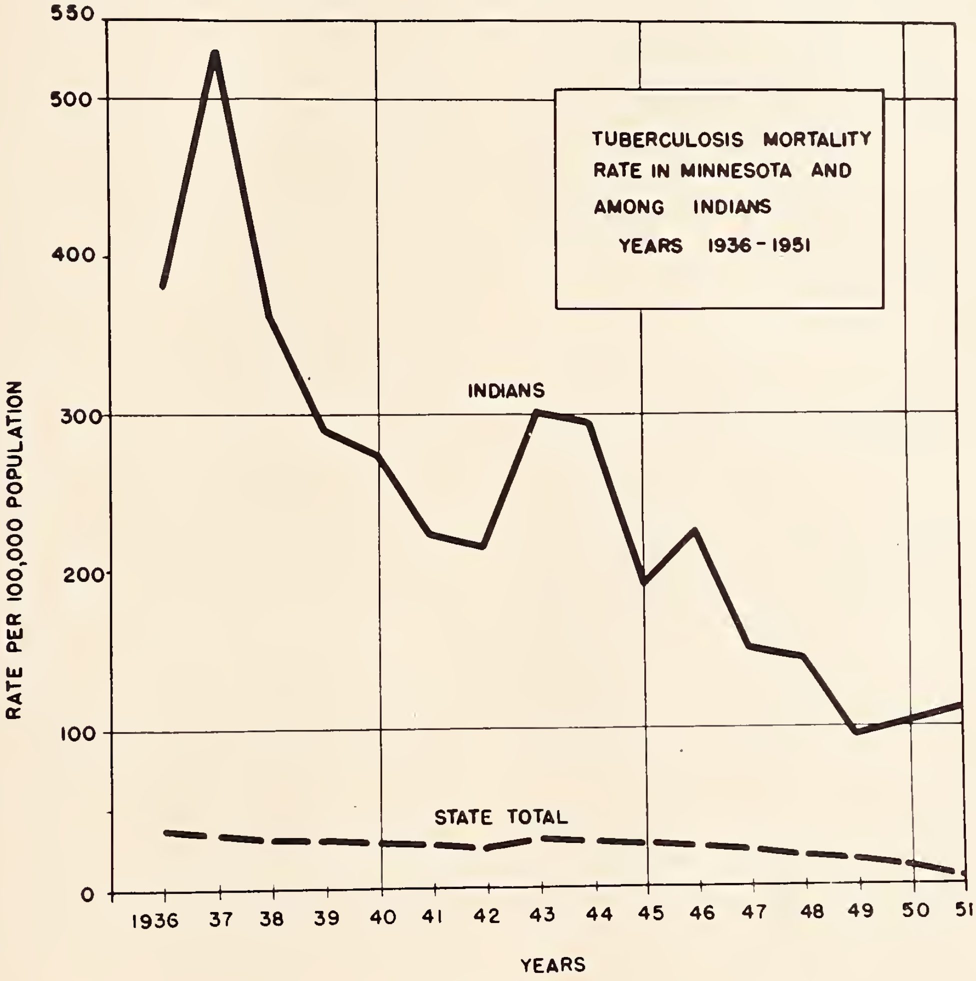


Fig. 3.

The case-finding and treatment program in St. Louis County has been so successful that it has created many vacancies at Nopeming Sanatorium. This has made it possible to send most of the active cases from several northeastern Minnesota counties to Nopeming for treatment, thereby creating vacancies at the State Sanatorium so that this institution should be able to receive the patients from other county sanatoria in northern Minnesota if and when they are ready to close.

Trends in Tuberculosis Control

The tuberculosis mortality rate in the state was over 100 per 100,000 population per year for the first decade of this century. It reached its highest point, 119.3, in 1911 and has declined steadily since, with the exception of two brief periods: the first during the influenza epidemic in 1918 and 1919; the second, during World War II between 1943 and 1945. The sharpest fall in the mortality rate during this century took place between 1947 and 1951, reaching its low point, 8.5 per 100,000 population, in 1951. Unfortunately, no accurate morbidity rates are available on a statewide basis at this time. If present trends continue, it would seem that adequate control, if not complete eradication, of tuberculosis should be achieved within a few years as far as the stable population of the state is concerned. However, there remains a hard core of tuberculosis types which will require special methods to control:

1. Recalcitrant positive sputum cases, who refuse to accept treatment over a sufficient period of time to arrest their disease. These cases constitute one of our greatest public health menaces as far as tuberculosis is concerned. They fall into four classes: psychopaths, alcoholics, criminals, and tramps. They are usually males and most frequently chronic alcoholics. While they are in the sanatorium, they are disciplinary problems and disturb the patients who are trying to get well. When they are out of the institution, they live in rooming houses, eat in restaurants, and patronize bars as long as their money holds out.

The problem of controlling and eradicating tuberculosis in this group of cases cannot be carried out on a voluntary basis. Separate quarters with proper restraints must be set up and maintained in one or more of the state institutions for the care of these people in order to protect the interest of the normal tuberculosis sanatorium patient and the health of the community at large. Attempting to treat patients from these groups in a standard tuberculosis sanatorium is simply a waste of the taxpayers' money unless these individuals know that they can be put in an institution from which they cannot escape if they do not conform to the usual sanatorium rules and regulations.

The state has adequate laws on the books to control these people but lacks proper facilities for their confinement. Dr. Albert Krieser, State Tuberculosis Control Officer for psychiatric and penal institutions, believes that a 50-bed addition to the Anoka Tuberculosis Unit, with private rooms that can be barred and locked, would provide satisfactory quarters for the treatment of all recalcitrant sanatorium patients, penal tuberculosis cases, and dangerously insane tuberculous patients.

2. It is felt by tuberculosis workers that displaced persons, most of whom come from countries in Europe heavily infected with tuberculosis, will have a much higher rate of breakdowns from tuberculosis than the normal population, even though they show no evidence of active disease when they are admitted to the United States. For this reason, it is believed that all displaced persons should be screened at least once a year for active tuberculosis over a period of five to ten years after their arrival from Europe.

3. The federal government provides for the care of persons who contract tuberculosis while serving in military units stationed in Minnesota. However, no provision is made for the care of their families. In order to protect its own citizens, provisions will have to be made in Minnesota for the immediate hospitalization of all service men's families who have positive sputums, where they will be isolated and under treatment while arrangements are being made for their transfer to their state of residence.

4. Migratory, agricultural, and industrial workers create another serious public health problem. When these persons contract tuberculosis, they are supposed to be returned for treatment to the states in which they have residence. Frequently, a great deal of time is lost in making arrangements for their return, and very often their home states either have no available tuberculosis beds or refuse to accept them for treatment. In the meantime, these persons live in boarding houses and hotels and create a serious public health menace.

The migratory chronic tuberculosis cases have been a public health problem in this country for years. Few of them have money and most of them believe that a change of climate would be the answer to their health problem. Most of these people have no technical or professional skills; and when they need money and food they almost invariably seek employment in restaurants because the work is light, they can keep warm and get enough to eat. It would therefore seem logical to set up some arrangement for yearly screening of restaurant workers and food handlers throughout the state. Without adequate control measures for the migratory and recalcitrant cases of tuberculosis, it is doubtful whether the incidence of this disease in Minnesota will fall very far below its present level.

Service-Connected Tuberculosis

A high percentage of Americans, particularly from this section of the country, have never had tuberculous infection before induction into military service. Thousands of these inductees serve in European and Asiatic countries where the incidence of tuberculosis is very high. Many of these men and women will have their first real exposure to tuberculosis in military service and a certain number of them are bound to develop active disease later on. In addition to x-ray examination of the chest, skin tuberculin testing on induction into, and separation from service should yield valuable information. When active disease develops in veterans who have been so tested it would give the best evidence of determining whether or not the individual's tuberculosis is service-connected.

General Comment and Summary

Great progress has been made in all phases of tuberculosis management during the past years. Many mistakes have been made, but on the whole the program has been good; and there has never been any relaxation of the effort of Minnesota tuberculosis workers to alleviate the lot of the tuberculous patient and to protect his family and neighbors. In the early days of the sanatorium program, the isolation of the positive sputum case was, in most instances, more important to the community than the actual treatment of the patient. Today, the tuberculous patients who can adjust themselves to a good sanatorium regime and complete the treatment prescribed for them are usually assured of a good clinical result.

The improvement in the treatment of tuberculosis has been brought about by several factors: (1) Better case-finding methods; (2) more adequate education of the public; (3) marked improvement in anesthesiology and surgical methods in the definitive treatment of pulmonary disease; (4) proper use of antibiotics, particularly streptomycin and other chemotherapeutic agents in both the medical and surgical treatment of tuberculosis; (5) rehabilitation started during and continued after sanatorium treatment.

While the results obtained in the treatment of tuberculosis during the past few years have been good, this is no time to adopt an attitude of complacency. Total war or other national catastrophe that would disrupt the present program of care and bring about serious physical hardships to large numbers of our citizens could bring about a serious increase in this disease.

Conclusions

Minnesota should:

1. Establish a tuberculosis unit where recalcitrant and other uncontrollable positive sputum cases of tuberculosis can be kept under restraint until they are no longer public health menaces.
2. Establish a routine procedure for the immediate isolation of positive sputum cases who are not eligible for county or state care.
3. Increase state aid for county-pay patients in all state and county sanatoria.
4. Continue x-ray screening of the entire normal population.

Bibliography

1. Slater, S. A.: Results of Pirquet tuberculin tests on 1,654 children in rural community in Minnesota. Am. Rev. Tuberc., 10:299-305 (Nov.) 1924.
2. Hedberg, G. A.: The St. Louis County program of tuberculosis control. Minnesota Med., 28:122-125 (Feb.) 1945.

THE CHANGING TREATMENT OF TUBERCULOSIS

(Continued from Page 32)

tered artificial pneumothorax? Many of the complications of pneumothorax were related to its injudicious use. Is our present treatment the one which we will be using four or five years hence? I doubt it. The whole treatment of pulmonary tuberculosis at the present time is in such a state of flux that it is difficult to keep abreast of new developments. The broad outlook appears promising. We appear to be headed in the right direction, and we appear to be making ground, but we must keep ever alert for variations and improvements, and try to give our patients the best and most up-to-date treatment available in an ever changing field.

TREATMENT OF ANEMIA

FRANK J. HECK, M.D.

Rochester, Minnesota

KNOWLEDGE regarding the metabolism of iron has been accumulating for many decades and the past thirty years particularly have been fruitful in this regard. The experimental use of radioactive iron during the past ten years has allowed many studies that previously would have been impossible. All these studies are adding to general knowledge of the way in which iron is absorbed, utilized and excreted. The requirements of the body for iron can be divided into two main groups: (1) physiologic requirements for growth, for pregancy and lactation and for blood lost through menstruation; and (2) pathologic requirements when, as the result of loss of blood, increased amounts of iron are needed in order to maintain body metabolism, or when situations arise in which abnormal absorption or retention of iron may be present.

Until relatively recently, it was the normal view to consider that, after the period of growth had been attained in the male and after the climacteric in the female and in the absence of loss of blood, iron was held so tenaciously by the body that no further need existed for this element. Improvements in methods of research have pointed out that this viewpoint must be modified, since loss of iron occurs as the result of daily wear and tear by means of the loss of iron-containing cells throughout the body. This loss amounts to at least 1 mg. per day and it is quite possible that current investigations will lead to further revision in knowledge of the total normal loss of iron and will show that the amount of iron lost is considerably greater than was previously believed.

The average man who weighs 70 kg. has between 4.5 and 5 gm. of iron in his body. Of this amount, about 65 to 70 per cent is found in the hemoglobin of the blood and muscles, the latter constituting a relatively small amount. About 20 to 25 per cent of the total iron in the body is found in storage depots, such as the liver, spleen and kidney. The remainder is parenchymal, where it is not available for use as hemoglobin; in this form it is found in such material as cytochrome, catalase and peroxidase. The iron that is stored in such depots as the liver, spleen and kidney, is available for replacement of hemoglobin.

Normally, the average diet in the northern part of the United States contains 10 to 12 mg. of iron per day but of this amount, only about 10 per cent is absorbed. The iron is absorbed in the ferrous form by the mucosal cells of the gastrointestinal tract and is combined in the ferric form with apoferritin to produce ferritin. Definite limits are present as to the amount of ferritin that the cell can contain, so that these mucosal cells become physiologically saturated and no further iron is absorbed. When the amount of ferritin has decreased to the point at which the mucosal cells are no longer physiologically saturated with iron, then more can be absorbed from the intestine.

Iron is transported in the blood stream as serum or plasma iron. Under basal conditions, the amount of serum iron is relatively constant but a prompt rise is noted after oral administration of a single dose of iron, either in food or as a salt. Values for serum iron are decreased in states of iron deficiency and in patients who have anemia caused by infection, but are increased in patients who have pernicious anemia, hemolytic anemia, refractory anemia, hemochromatosis or hepatic disease. When the body needs iron, as in pregnancy and states of iron deficiency, the uptake of iron is increased to more than normal, whereas in diseases in which stores of iron are abundant, such as hemolytic anemia and pernicious anemia, little absorption takes place. After acute loss of blood, no sudden increase occurs in absorption of iron but apparently a lag is present because of the mucosal physiologic saturation that must be overcome before increased amounts of iron are absorbed.

As mentioned previously, a number of periods exist in which physiologic demands for iron are great. The greatest relative need for iron is in infancy when, because of relatively striking growth, the volume of blood is much increased and, therefore, the need for iron and hemoglobin

---

Read at the meeting of the Minnesota State Medical Association, Minneapolis, Minnesota, May 27, 1952.

From the Division of Medicine, Mayo Clinic, Rochester, Minnesota.

is increased. After the first two years of life, the need for iron is fairly steady because then the rate of growth is slow and relatively uniform. Then at puberty, with accelerated growth, needs for iron are again increased in both the male and the female. The institution of menstruation introduces a second need for iron in the female. Furthermore, in the female an increased physiologic demand for iron is present during pregnancy and lactation. Thus, it is to be expected that hypochromic or iron-deficiency anemia would be seen more commonly at these periods, particularly if any abnormality of menstruation occurs or if an inadequate state of nutrition is present.

Hypochromic Anemia

The necessity and desirability of careful investigation of patients who have hypochromic anemia in order to determine the source of the anemia have been universally emphasized. This is particularly true for male patients but an adequate explanation for the anemia of female patients should be sought for just as diligently. It must be admitted that at times no satisfactory explanation for the anemia can be found, or the cause of the anemia becomes apparent only after several years of observation of the patient.

The critical hematologic values at which patients are considered to be anemic vary from institution to institution or hospital to hospital. It is my impression that many perfectly normal women are encountered whose erythrocytes number approximately 4,000,000 per cubic millimeter of blood and who have a value for hemoglobin form 11 to 11.5 gm. per 100 cc. Likewise, my colleagues and I prefer to consider the lower limits of normal values for hemoglobin in the male to be between 12.5 and 13 gm. and it is only when values are less than these levels that the problem of anemia is considered seriously. It is always difficult to estimate what relationship a slight decrease in hemoglobin might have to the patient's fatigue and weakness; my observations make me consider that a decrease of at least 2 to 3 gm. must be present before symptoms of this kind can be attributed to the anemia. Also, it has been observed many times that patients in whom anemia develops slowly can adjust themselves so well to decreased values for hemoglobin that they are not particularly aware of fatigue and weakness; it is only after their hemoglobin has been increased to normal that they realize that what they considered to be a normal situation was actually one of considerable fatigue.

No definite rules can be laid down for the examination and investigation of these patients. The history of long-standing anemia often almost automatically excludes the possibility of any serious disease. From a careful history and physical examination, together with good judgment, the examining physician can determine the extent of the investigation needed. Obviously, anemia appearing for the first time in older men or women should receive an extremely thorough investigation. The type of anemia and the hematologic picture that accompany loss of blood or lack of iron from a nutritional standpoint are those of hypochromia; microcytosis, normocytosis or occasionally macrocytosis may be noted. If definite bleeding is found and corrected, in most cases cure will result automatically if the patient is receiving an adequate diet.

This process can be speeded up by the oral administration of iron. It should be emphasized that the result of treatment of hypochromic anemia with iron salts is positive and that there should be definite and continued improvement until the hemoglobin returns to normal. Whether or not administration of iron will lead to a response can be determined in most cases from the response of the reticulated erythrocyte. Just as in the treatment of pernicious anemia, if treatment is effective and if the initial level of hemoglobin is low enough, there will be a response from the reticulated erythrocyte which will reach its peak between the eighth and fourteenth days of treatment. The height of this response is never very great but will often run between 4 and 6 per cent and occasionally as high as 10 to 12 per cent. There should then be a steady increase in the hemoglobin to a normal value. After the hemoglobin has returned to normal, a long period is required for the stores of iron to be returned to normal since in iron deficiency states the increased absorption of iron apparently stops as soon as the demands of the bone marrow for increased hematopoiesis have been met. It becomes obvious then that if the response to iron therapy is not prompt, either the loss of blood is greater than the hemoglobin formed or, as can be more commonly assumed, the diagnosis and treatment are incorrect and a new start must be made to determine what might be wrong.

In some instances hypochromic anemia is apparently the result of failure of the mucosal cells to absorb iron. Instances of this type of anemia are rare. More often inability to tolerate the preparation of iron leads to discontinuance of its use. Certain preparations cause intestinal irritation in a much higher percentage of cases than other preparations do. Both ferric citrate and ferric ammonium citrate have a relatively high percentage of gastrointestinal reactions. For this reason, for many years now ferrous carbonate, ferrous sulfate and other ferrous salts have been utilized in the treatment of hypochromic anemia. Very often giving the medication with the meal will enable the patient to tolerate it and, likewise, starting with a small dose and increasing it gradually to the maintenance dose will enable others to tolerate the medication. A total dosage of 15 to 20 grains (1 to 1.3 gm.) per day of ferrous salt is adequate. I know of no data to support the thesis that liver extract or liver preparations of any kind are of particular benefit in the treatment of this type of anemia except for that amount of regeneration of hemoglobin which one would expect from the iron content of the liver. What little benefit might accrue from the use of liver extracts which have been especially prepared for this type of anemia do not give the patient sufficient benefit to warrant their expense.

For many years iron preparations have been available for parenteral use, particularly in the form of iron cacodylate as well as other types of colloidal iron preparations. These could be given in only relatively small amounts and use of some of the colloidal iron preparations was attended by a high incidence of reaction in the form of chills, fever, nausea, vomiting and pain. Because of the severity of reactions, many observers felt that there was no specific indication for ever giving iron parenterally. With the introduction of saccharated iron oxide preparations, or the so-called high molecular iron, it is now possible to give relatively large quantities of iron parenterally in a single dose and with little chance of untoward reaction. A number of these preparations are on the market at present but the indications for their clinical use are and should continue to be strictly limited for the following types of patients. 1. A few patients are so intolerant of iron that it is impossible for them to take it orally in any of its usual forms. 2. There are apparently too some persons who, though able to tolerate iron that is orally administered, seem to have some interference in the absorption mechanism in the gastrointestinal tract and, therefore, are unable to make available to the body the iron which is taken into the gastrointestinal tract. 3. It is conceivable that in very rare instances the parenteral administration of iron might be desirable in an attempt to restore the hemoglobin rapidly after loss of blood rather than to give the patient transfusions.

The mode of administration of these saccharated iron oxide preparations is very simple. Although there are several methods for calculating the amount of iron required to restore the hemoglobin, the simplest method is to calculate a need of 25 mg. of metallic iron for each 1 per cent deficit in the hemoglobin. The first injections of iron should be small, only 25 to 50 mg. of metallic iron, in order to determine whether the patient has any reaction. If no reaction occurs, the dosage can be increased to 100 mg. of metallic iron per injection and injections may be given as often as twice a day. In this way, large quantities of metallic iron can be introduced into the body in a relatively short time. The reactions which may occur are those which have been previously mentioned. The response to parenterally injected iron is rapid and the peak response of the reticulated erythrocytes occurs somewhere between the fifth and the twelfth or fourteenth day. An amount of iron in excess of that calculated for restoration of hemoglobin to normal is desirable when this method is used in order to provide a reasonable amount of iron for storage. It should be emphasized that indications for the intravenous use of iron are few and that in almost all cases of hypochromic anemia oral administration of iron will be satisfactory.

Other Types of Anemia

A great many of the anemias seen in practice have no relationship to either loss of blood or to nutrition. In these instances, the stores of iron in the body are adequate and there is no need for giving additional iron or any benefit to be derived from it. In such diseases as pernicious anemia or any of the hemolytic anemias, there are large quantities of iron in the body, usually far more than the average normal, and these are available for conversion into hemoglobin. Likewise, a great many anemias are seen which are the accompaniment of some other primary disease, such as the anemia which so commonly accompanies rheumatoid arthritis or the anemias seen in association with infections, glomerulonephritis or the various types of malignant lesions in which there is no loss of blood. In this group also are anemias commonly associated with the blood dyscrasias such as those seen in the various groups of the lymphomas or of the leukemias. Here there is no deficit in iron content in the body and the administration of iron orally cannot be expected to result in any benefit to the patient.

Pernicious Anemia.—Over the years, a great deal has been written about the differential diagnosis of the macrocytic anemias. In this part of the country, pernicious anemia constitutes about 95 to 98 per cent of all of the macrocytic anemias seen in practice. Due attention should be paid particularly to the cardinal symptoms of this disease: (1), the glossitis, (2), the typical constant glove and stocking type of paresthesia which occurs in a high percentage of cases, and (3), the diarrhea which occurs in a relatively smaller proportion of the cases. In addition to studies of the blood and a suggestive history, it is important that the presence of achlorhydria be established, preferably after the injection of histamine before the diagnosis of pernicious anemia is made. Failure to ascertain whether free hydrocloric acid is present or absent can lead to considerable embarrassment, particularly if free hydrochloric acid is demonstrated after the patient has been treated for a long period for pernicious anemia and then, because adequate amounts of free hydrocloric acid can be demonstrated, the patient has to be told that he does not have pernicious anemia. This can result only in resentment toward the physician who has advised the use of the liver extract. Although examination of the bone marrow has certain advantages, it is not a necessary preliminary in the treatment of patients with pernicious anemia.

An adequate history, the demonstration of macrocytic anemia and of the absence of free hydrocloric acid are from a practical standpoint sufficient evidence for advising treatment with potent material in the form of either a good liver extract or of vitamin B_{12}. Because of the increased association of carcinoma of the stomach and pernicious anemia, it is always desirable to have a roentgenoscopic examination of the stomach before treatment is started as well as at yearly intervals thereafter. The result of treatment of pernicious anemia with any type of potent material is almost always very effective. If the initial level of erythrocytes is less than 3,000,000 cells per cubic millimeter of blood, it is possible to determine, within a week as a rule, by study of the reticulated erythrocytes, whether or not the response to treatment is adequate. The height of the reticulated erythrocytes at the peak of the response, that is, between the fifth and eighth days, will vary inversely with the level of the initial counts. With inadequate initial dosage, a suboptimal response will be obtained so that in these cases a secondary increase of reticulated erythrocytes may be experienced. However, if initial therapy has been adequate and if adequate treatment is continued, no further reticulated erythrocyte response will be seen.

Patients with pernicious anemia can be divided into two groups for treatment purposes, (1) those who have anemia alone without neurologic symptoms, and (2), those in whom neurologic manifestations play a large role or are the primary symptoms. For the first group, for many years I have used 15 units of a good potent preparation of liver extract and have given this amount initially on three successive days. Then 1 cc. of this 15 unit material is injected once a week until the concentration of hemogloblin and the erythrocyte count have returned to normal. After this, the interval between injections is gradually increased. By observing the levels of hemoglobin and erythrocytes in the blood and the appearance of the patient, I can then determine what the interval should be between injections. It is ordinarily not deemed advisable to give the material at intervals longer than three or possibly four weeks since there is no particular advantage in attempting to make the interval as long as possible. For the patient who has neurologic manifestations, the initial dose is the same, then 15 units of the material are given at intervals of five to seven days and the patient is observed for improvement. At the end of two months, if improvement is not occurring satisfactorily, the amount of potent material given at each injection should be increased or the interval between injections should be decreased. This increased dose should be employed until all neurologic manifestations have disappeared and only then can a longer interval between injections be used. At the Mayo Clinic we offer our patients the opportunity to learn to give their own injections but warn them of the desirability of regular checks on their hemoglobin and erythrocytes as well as informing them of the necessity of increased amounts of potent material in the event of any intercurrent illness, or if they should happen to have a recurrence of any of the cardinal symptoms of their disease.

There is no reason to believe that vitamin B_{12} will not do everything that a good potent liver extract will do and by substituting 15 micrograms of vitamin B_{12} for the 15 units of liver extract, basically the same result will be obtained. Although folic acid will bring about a response in the blood in cases of pernicious anemia, in view of the fact that it will not control and even will permit the development of gastrointestinal and neurologic manifestations, the use of this material is essentially contraindicated.

Other Types of Macrocytic Anemia.—Other members of the group of macrocytic anemias are seen very rarely in Minnesota and the surrounding territory. Occasionally cases of nontropical sprue, the so-called pernicious anemia of pregnancy, and macrocytic anemia of infancy may be encountered. There is still variable opinion as to any single method of treatment in these cases. However, folic acid given orally will bring about a response in some of these cases in which previous trial of vitamin B_{12} has failed. The dose of folic acid is 5 to 15 mg. daily.

Summary

Iron therapy is indicated whenever anemia is due to a loss of blood or an inadequate supply of iron on a nutritional basis. Except in rare instances, the treatment should be oral administration of one of the iron salts, such as ferrous carbonate, ferrous sulfate, ferrous gluconate or any other ferrous preparation. Under unusual circumstances and in the rare instance in which the patient is intolerant of iron to the point that he cannot take it orally, iron can be given by the intravenous route with only slight risk of reaction. Iron is not of benefit in the treatment of the anemias of infection, malignant disease, rheumatoid arthritis, and so forth, unless loss of blood or iron deficiency on a nutritional basis is associated.

The treatment of pernicious anemias consists of giving potent liver extract or adequate concentrations of vitamin B_{12}. The amounts given depend on the type of involvement since patients with neurologic manifestations require much greater quantities of potent material in order to obtain benefit. The other rare macrocytic anemias, must be treated essentially on a trial basis to determine whether folic acid or vitamin B_{12} will bring about a response. In all cases, regardless of type, the importance of an adequate diet cannot be overemphasized.

CONFINEMENT OF TUBERCULOSIS PATIENTS

Even in a community with plenty of tuberculosis beds, it can hardly be expected that every patient with chronic tuberculosis and positive sputum be hospitalized indefinitely. For example, the intelligent and relatively asymptomatic elderly patient, unsuitable for additional therapy other than rest, retired on a pension and living in a home without children, can remain at home without excessive danger to himself or to others. The irresponsible bar fly, who finally persuades the tavern owner to let him wait on table or work in the kitchen to help pay for his drinks, clearly needs continued institutionalization of some type. Even where tuberculosis beds are limited, and when there is little to offer therapeutically, it is justifiable to use every reasonable means to confine such a patient to a sanatorium or hospital indefinitely.—Committee on Therapy, American Trudeau Society, *The American Review of Tuberculosis,* May, 1952.

COMMON OCULAR MANIFESTATIONS OF DIABETES MELLITUS

JOHN H. PETERSON, M.D.
Duluth, Minnesota

DIABETES may be accompanied by changes in nearly all the structures of the eye. The more serious changes are those which occur in the retina. Those changes in the retina which can be said to be due to diabetes alone are probably second in frequency to those occurring in the lens.[17] However, because of the common association of arteriosclerosis and hypertension with diabetes, the number of cases with retinal lesions is much greater than those showing other pathology.

Among the changes noted but of lesser importance are subconjunctival hemorrhages seen under the bulbar conjunctiva. These usually clear up spontaneously in a few days.

Changes in refraction are quite common in diabetes, especially among those in the older age groups. This may be evidenced by sudden decrease in visual acuity which had previously been normal or it may manifest itself by frequent small changes in visual acuity over short periods of time and result in the patient asking for refractions frequently. Needless to say, one should be careful about changing lenses for diabetics until their diabetic condition is stabilized. The cause of such refractive changes in the diabetic is not definitely known. One writer ~~Duke-Elder~~ feels that it is due to a change in the lens. He states that as the blood sugar rises, provided available water reserve is maintained, the osmotic pressure of the aqueous tends to decrease, largely due to the elimination of osmotically active substances from the blood in the increased flow of concentrated urine. The lens is a comparatively stable system, not readily participating in the fluctuations common to all body fluids, and, therefore, will tend to maintain its original molecular concentration. Therefore, in order to maintain osmotic equilibrium, fluid will tend to flow into the lens from the chambers of the eye. The lens will then swell, causing an increase in its curvatures with a resulting myopic change. With a fall in blood sugar, a reverse in osmotic flow occurs and a hyperopic change occurs. One should always suspect diabetes when unexplained sudden refractive changes occur, especially in the adult.[4]

The ability to do sustained close work may be impaired in the diabetic because of a weakened ability of the eye to accommodate. In some, attempts to do close work are followed by headache, blurred vision and vertigo. The condition may improve on treatment of the general condition but often these people may have to use a stronger lens than usual for close work.[18]

Occasional cases of paralysis of an extraocular muscle are noted in this disease. They are thought to be due to a neuritis affecting the nerve supply of the muscle or to a thrombotic lesion involving the ocular nuclei. The sixth nerve is most frequently involved with a resulting paralysis of the lateral rectus muscle. One eye only is usually involved. The resulting diplopia is usually exaggerated on turning the eyes to the affected side. The condition may last a long time but usually returns in two or three months to a normal state. The oculomotor and trochlear nerves may also be involved with paralysis of the muscles they innervate and supranuclear involvement may also develop with paralysis of upward and downward movements and convergence.[5]

In the iris the most frequent diabetic changes occur in the pigment epithelium and are characterized by edema, swelling and degeneration of the epithelium, with liberation of free pigment. The stroma is not ordinarily affected but in some instances may also be edematous and atrophic. Evidence of degeneration may also be found in the sphincter, dilator and ciliary muscles in this condition.

In rare cases of diabetes the condition Rubeosis Iridis is found. This is characterized by a proliferation of new vessels on the surface of the iris in the form of a ring around the pupillary border. Gonioscopic examination will often show large vessels running peripherally into the angle where they break up again into many branches connecting with Schlemm's canal and forming anterior synechia. A recurrent hyphema and glaucoma are commonly associated with this condition. The glaucoma responds very poorly to the usual

---

Read at the Annual Meeting of the Minnesota State Medical Association, Minneapolis, Minnesota, May 27, 1952.

procedures used for reduction of the tension. Histological examination of these cases has shown that the new vessels were not associated with inflammation or new tissue but lie in and upon the iris itself. The choroidal vessels are often dilated and in either region there may be extravasations of blood.[6]

A diabetic iritis is mentioned in the older literature but of late years most authorities feel iritis in diabetics is due to some intercurrent infection. We have had several cases of iritis recently which responded very poorly to the usual treatment. On further examination of these cases mild diabetes was found. As soon as the diabetes was treated also, the condition cleared readily. Some cases of serous iritis in diabetics seem prone to develop hyphema. One should always suspect hyperglycemia when hemorrhage is seen in iritis.

The occurrence of cataract among patients suffering from diabetes is quite common. The reason for this is not definitely known. Many of these people are in the age group when ordinary senile cataract may be found. O'Brien found that the normal blood sugar level was disturbed in about 50 per cent of 238 cases of senile cataract. He felt that the higher than normal concentration of sugar in the fluids surrounding the lens over a period of years may lead to the development of cataract.[14]

The typical diabetic cataract is the opacity occurring in younger diabetics. They are of ~~two~~ 2 5 general types. They are usually present in both eyes but more advanced in one. In one type there are numerous fine punctuate snowflakelike opacities in the anterior and posterior cortex close to but not immediately beneath the capsule. Sometimes iridescent granules are associated with the opacities. The other type is a posterior saucer shaped subcapsular opacity composed of confluent granules. However, the two types may be present in the same lens. These cataracts often develop over a period of months but in some young diabetics they may develop in a period of weeks or less where the diabetic control is poor and by institution of vigorous treatment of the diabetes they can often be greatly reduced or eliminated completely.[12]

O'Brien and Allen in a series of 260 young diabetics under twenty-one years of age, found 13 per cent had cataracts. In each instance the diabetes was poorly controlled for months or years before the cataract developed. They reported arrested development after satisfactory control. Waite and Bethume, in a series of 2,870 diabetics under twenty-one years of age, found opacities in 4 per cent. These were all severe diabetics. Fifty per cent of those with cataracts were out of control when first seen. The remainder of the cataracts developed in spite of good treatment.[15]

Priscilla White found cataract in 1.4 per cent of 2,191 diabetics and feels that they are due to poor control.[19]

Mars reported a series of sixty-one cases of juvenile diabetics of ten to twenty years' duration. There were no cataracts in his series. They were a group of diabetics well controlled from the beginning of the disease. He feels that there is no definite evidence of increase of cataract with increase in the age of a patient or duration of the disease, and that with good control there is definitely a decrease in the percentage of opacities. The treatment of cataract once developed in the diabetic is similar to that in any other individual. The diabetes should be well controlled before operation as the incidence of hemorrhage postoperatively is higher in diabetics than in the normal.[12]

Lipemia retinalis is certainly not a common finding in diabetes but perhaps should be mentioned here. Lipemia, a condition where the blood is altered in its appearance by the presence of fat in an emulsified state, is found in diabetes, alcoholism, starvation, phosphorus poisoning and xanthomatosis. However, it is only in diabetes that the changes can be seen in the retinal vessels. Eighty per cent of the cases have been reported in the female and the average age is twenty-five years. Most of the patients have severe acidosis at the time. Clinically the condition is first observed in the periphery of the fundus where the vessels become milky and hazy in appearance and gradually this spreads towards the disc. The arteries and veins gradually become flat and ribbon-like in appearance. In some cases the vessels near the disc are salmon-colored at this stage. In some cases there is a more yellow color to the vessels and often there is seen yellow-white stripes accompanying the arteries and veins as if the perivascularis were infiltrated with fat. In all cases the light reflex from the vessels becomes diffused or lost. The disc and remainder of the fundus are usually normal. In the worst cases the vessels become dull ivory in color and the fundus tends to become lighter in color due to similar changes in the choroidal vessels. When the condition clears up the periphery is the last to become normal in appearance.[7]

The most common and serious eye complications of diabetes are those occurring in the retina.

It is often difficult to determine whether or not the changes found in the retina of diabetics are entirely due to diabetes or whether they have been modified by some intercurrent disease such as sepsis, hypertension or nephritis.

The earliest and most characteristic early diabetic changes in the retina are the small round red spots found in the posterior pole of the eye, usually near the macula. They were formerly thought to be small hemorrhages but have been proved by Ballantyne[3] to be microaneurysms. This work has been confirmed by Friedenwald[8] and Ashton.[2] These spots will at times show a central light reflex on ophthalmoscopy, and are usually found in the inner nuclear layer. They vary from thirty to ninety microns in diameter. At this stage one may see small and larger round hemorrhages which are due to rupture of the aneurysmal walls and some which are deeper and confined to the outer molecular and outer nuclear layers. These appear to be from the plexus of capillaries at the outer boundary of the outer nuclear layer. Some of these microaneurysms undergo a process of thrombosis and cicatrization with formation of a small white spot seen ophthalmoscopically. Exudates are seldom seen clinically in the early changes previously mentioned but Ballantyne has seen clumps of albuminous material histologically in the middle and deeper layers in the earliest stage.

It is not uncommon to find the microaneurysms alone near the macula clinically. At a little later stage small hemorrhages and white dots may appear. The latter are never found without the aneurysms. The nature of the discrete white dots is not entirely known. Some are thought to be due to hyalin and fatty changes in the thrombosed microaneurysms and others to be homogeneous masses of hyalin and albuminous material surrounded by fat in the internuclear layers. Some of the latter tend to increase in numbers and coalesce and probably form the larger waxy patches seen at later stages of the retinopathy. In the condition up to this point it is rare to find ophthalmoscopically visible signs in the retinal vessels, but they are often a feature of the histology of the capillaries. Here Ballantyne found minute fat granules in the endothelium of the capillaries and this was occasionally associated with swelling of the endothelial cells. In some cases the capillary walls appear thickened and of a hyalin nature. There has been much speculation as to the significance of the findings.

Occasionally, at this stage, in addition to the above findings ophthalmoscopically, one may see soft cotton wool like patches. These patches when seen without evidence of arterial disease probably represent a toxemia from some intercurrent infection. After removal of the toxic process they tend to disappear.[20]

In an occasional diabetic with hypertension the fundus will show only signs of vascular hypertension and will be of no aid whatever as far as diagnosis of diabetes is concerned.[10]

Further changes in the retina in this condition are evidenced by changes in the veins, new formed vessels, periphlebitis, phlebosclerosis, increasing hemorrhage in the retina and vitreous, massive exudates, retinitis proliferans and retinal detachment. Ballantyne found the above changes in sixteen of 178 cases in his series of diabetic retinopathy. The above changes do not necessarily follow in sequence in diabetic retinopathy but they are always at least preceded by the formation of microaneurysms.[3]

The venous changes not associated with new vessel formation are characterized by, first, intermittent enlargement of the veins fairly close to the disc and usually in the principal veins. This has been described as beading or lateral knobs or buds from the veins. Also one may see overfilling and increased tortuosity of the veins which is not uniform in distribution and is limited to individual branches or segments of the veins. Yellow-white exudate may occur along the wall of some of these veins giving a sheathed appearance while others appear to be completely obliterated and the vein appears white and uniform in contour, peripheral to the thrombus. Hemorrhages may be associated with these sclerotic changes. These changes have been called phlebosclerosis because they resemble the changes in the arterioles in arteriosclerosis.[9] Three main types of retinal phlebosclerosis have been described: (1) the intimal type with venous thrombosis and fibrosis; (2) the medial type in the wall of the vein giving dilatation and constriction of venous segments resulting in a beaded appearance as a result of hyalin changes in the media; and (3) the adventitial type where changes occur secondary to changes outside the vein. Here a connective tissue sheathing occurs after subsidence of inflammation or edema. Ballantyne believes that the pale sheathed appearance of some of these veins is due to a fatty accumulation about the vein walls. Wagner stated that the yellow-white sheathing of some sections of veins in this condition is not explainable but believes it probably due to coagulated exudate in the perivenous spaces.

At some places in the retina where the altered dilated veins approach the surface the internal limiting membrane disappears and at these points one can see the origin of preretinal and vitreous vascular tufts.[3] The new vessels have a matrix of gelatinous appearing material with them on the surface of the retina and in the retina. This process is not typical of the usual retinitis proliferans which follow hemorrhage.[11] It is primarily a vascular growth and the supporting matrix is a primitive tissue which may arise as a metaplasia of the tissue of the vein wall. This preretinal vascular membrane can finally become organized and contract causing deformity of the retina and retinal detachment. Hemorrhage from these new vessels is rather common in the later stages of this condition. Still later in this disease one may find cystic degeneration of the retina, secondary glaucoma, secondary cataract, cholesterol crystals in the vitreous and subretinal fluid and further increases in the scleratic and fatty changes in the vessels.

Ballantyne found that thirty-eight of 176 diabetics with retinopathy had the so-called mixed type of retinopathy, that is, they had typical diabetic features plus changes of vascular hypertension including cotton wool patches, striate or flame shaped hemorrhages, and arterial changes. This type of retinopathy was usually seen in patients over thirty years of age who had had the disease for fifteen years or more.

There seems to be a great difference of opinion in the literature as to the value of good diabetic control in the incidence of diabetic retinopathy. Ballantyne and O'Brien felt that the one most important factor in its development was the duration of the diabetes. It was most often found in their series after ten to fifteen years of the disease, and was more often found among older patients who had had the disease this length of time. They cited examples of cases where the control had been poor and the retinopathy minimal or absent and cases where the control had been good and the retinopathy severe and concluded that poor control was not necessarily a factor in its development. During the past two years, however, Post and Strickle[16] and Anderson[1] and Maumenee[13] have shown that the incidence of retinopathy can be reduced and postponed by strict diabetic management. Anderson states, however, that in advanced diabetic retinopathy in the elderly patient the diabetic treatment should not be too vigorous and he should have a diet relatively high in protein to aid in repair of damaged ocular tissue.

References

1. Anderson, G.: Present status of diabetic retinopathy. Am. J. Ophth., 32:705-707, 1949.
2. Ashton, N.: Vascular changes in diabetes with particular reference to the retinal vessels. Brit. J. Ophth., 33:407-420, 1949.
3. Ballantyne, A. J.: The state of the retina in diabetes mellitus. Tr. Ophth. Soc. U. Kingdom, 66: 503-543, 1946.
4. Duke-Elder: Textbook of ophthalmology, 4, p. 4364. St. Louis: C. V. Mosby Co., 1949.
5. Duke-Elder: Ibid. p. 4114.
6. Duke-Elder: Textbook of ophthalmology. Vol. 3, p. 2385. St. Louis: C. V. Mosby Co., 1945.
7. Duke-Elder: Ibid. p. 2743-2744.
8. Friedenwald, J. S.: A new approach to some problems of retinal vascular disease. Am. J. Ophth., 32:487-497, 1949.
9. Gibson, G. G., and Smith, L. W.: Retinal phlebosclerosis. Arch. Ophth., 26:841-851, 1951.
10. Kantar, B.: Diabetic retinopathy. Bull. U. Minn. Hos. Vol. 21, (March 31) 1950.
11. Klein, Bertha: Retinitis proliferans, clinical and histological studies. Arch. Ophth., 20:427-436, 1938.
12. Marrs, W. G.: Cataracts and retinopathy in juvenile diabetics. Am. J. Ophth., 35:577-582, 1952.
13. Maumenee, E. A.: Diseases of the retina. Arch. Ophth., 47:664-670, 1952.
14. O'Brien, C. S.: Hyperglycemia in patients with advanced senile cataract. Arch. Ophth., 6:806, 1931.
15. O'Brien, C. S., and Allen, J.: Ocular changes in young diabetic patients. J.A.M.A., 120:190, 1942.
16. Post, I. T., and Strickle, H. W.: Fundus changes in juvenile diabetics. Am. J. Ophth., 34:119-1126, 1951.
17. Tassman, I. S.: The eye manifestations of internal diseases. p. 502. St. Louis: C. V. Mosby Co., 1946.
18. Tassman, I. S.: Ibid. p. 503.
19. White, P.: *In* Joslin, E. P., et al. Treatment of diabetes mellitus. p. 761. Philadelphia: Lea & Febiger, 1946.
20. Wagener, H.: Retinopathy in diabetes mellitus. Proc. Am. Diabetes Assoc., 5:203-215, 1945.

URGENT SURGICAL CONDITIONS IN THE NEWBORN

ALVIN B. HAYLES, M.D.
Rochester, Minnesota

IN RECENT years great progress has been made in surgical care of newborn infants. This progress has resulted from improved surgical techniques augmented by better understanding of nutrition, fluid balance and metabolism of electrolytes. The pediatric surgeon, the pediatric nurse and the pediatrician working together as a team have been able to accomplish much for babies who, not many years ago, were considered to have hopeless conditions. Prompt and accurate diagnosis is of utmost importance in infants since many of the conditions to be discussed must have immediate surgical treatment if the baby is to survive.

It is the purpose of this presentation to review the cardinal diagnostic points in a group of diseases that are now amenable to surgical correction. No effort will be made to discuss all the conditions that may at one time or another require surgical intervention nor will surgical techniques be described. No attempt has been made to include fractures and injuries to the peripheral nerves that may occur in the newborn. For convenience and simplicity the conditions will be discussed by systems.

Central Nervous System

Subdural hematoma in early life is being recognized with increasing frequency.[9,20] It may or may not be associated with evidence of fracture of the skull or injury to the scalp. It is recognized much more frequently in the late part of infancy or the early part of childhood than in the neonatal period. However, physicians should be constantly aware of the fact that subdural hematoma may be encountered in the newborn child and that adequate treatment may prevent severe crippling deformities in later life. The frequency with which subdural hematoma is diagnosed is in direct relation to the index of suspicion on the part of the physician. In a typical case, respirations are difficult to establish soon after birth and cyanosis is prominent. Feedings are taken poorly and vomiting, although not always present, is usually a severe problem. The vomiting usually is not projectile as contrasted with that of intestinal obstruction. Lethargy is marked and varying degrees of shock may be observed. Convulsions or twitchings may be present. Physical examination discloses a bulging or tense fontanel and perhaps irregularity of the pupils or retinal hemorrhages. The normal neurologic responses of the newborn infant are depressed or absent.

Examination of cerebrospinal fluid may be carried out but frequently it is not of great help. The presence of gross blood in the cerebrospinal fluid does not necessarily indicate subdural hematoma nor does xanthochromic fluid indicate that the hemorrhage is confined to the subdural space. Some physicians consider that lumbar puncture benefits the baby and aids in the exclusion of the possibility of hemorrhage into the nervous system. A diagnosis of subdural hematoma is established by discovery of a blood-containing cyst by means of the introduction of needles into the subdural space through the lateral margins of the anterior fontanel. This procedure is not difficult but it is best carried out by a qualified neurosurgeon. When the diagnosis of subdural hematoma has been established, frequent taps of the hematoma become necessary until fluid fails to accumulate. The great majority of subdural hematomas in the newborn infant are bilateral so that the finding of a subdural hematoma on one side indicates search for a similar lesion on the opposite side. If subdural hematomas can be evacuated completely by a series of subdural taps, improvement will be striking and prompt. Unfortunately, removal of the fluid by this relatively simple technique does not mean cure of the condition; in some cases it may be necessary for the neurosurgeon to do a more extensive procedure in which the residual sac is freed from the brain in the hope that this procedure will prevent contracture, scarring and symptoms in later life.

Hydrocephalus in the newborn baby may be so severe as to prevent delivery of a living child.

From the Section of Pediatrics, Mayo Clinic, Rochester, Minnesota.

Read at the Annual Meeting of the Southern Minnesota Medical Association, Austin, Minnesota, September 8, 1952.

However, when hydrocephalus is noted in the neonatal period, when it is progressive and when the presence of subdural hematoma has been excluded, it is imperative that surgical care be considered. This does not mean that hydrocephalus can be corrected by surgical intervention, but a series of procedures that may offer a ray of hope are now under investigation. If hydrocephalus is to be corrected it must be done before extensive atrophy of the brain occurs from the increased pressure. The surgical techniques that have been devised include removal of the choroid plexus,[7] the Seton procedure[19,37] and various shunt operations, such as ventriculomastoidostomy[28] and ventriculo-ureterostomy.[27] In general, it is safe to say that the results of these techniques have been unsatisfactory but the outlook should not be wholly pessimistic since from these continued efforts it is hoped that some day a satisfactory method of management may be devised.

Respiratory System

Respiratory obstruction in the newborn infant may be associated with numerous lesions.[25] Large tumors about the nasopharynx, by virtue of their size, may prevent an adequate airway or prohibit feedings. These lesions may include ranula of the tongue, lymphangioma, hemangioma or cysts about the mouth or nasopharynx. Treatment in the individual case depends on the size, location and type of the lesion but tracheotomy may be necessary if respirations are disturbed. Congenital lesions that produce obstruction of the pharynx, larynx or trachea include hemangioma, fibroma, laryngeal polyp, cystic lesions of the larynx and congenital laryngeal relaxation (flabby larynx). In these instances tracheotomy may be a lifesaving procedure.

It is well to remember that, although tracheotomy in the newborn infant may be lifesaving, it is extremely difficult to manage tracheotomy tubes in children of this age. The tube must be cleaned at frequent intervals and nursing care day and night is absolutely essential. A small rubber catheter should be attached to an apparatus that provides gentle suction to aid the attending nurse in aspiration of the tube. A small plug of mucus is enough to obstruct the tube and cause suffocation. Too vigorous aspiration of tracheotomy tubes in the newborn child results in hemorrhage which may in turn produce crusts or flecks that obstruct the tube. An atmosphere of moist oxygen should be provided to aid in maintenance of liquid secretions. Efforts should be made to correct the primary difficulty as promptly as practical so the tube may be removed at the earliest possible date.

Infants who have laryngeal obstruction display an inspiratory type of stridor associated with marked retraction of the sternum, the suprasternal notch and even the supraclavicular area. Respiration may be extremely difficult and may be associated with a crowing sound. Cyanosis may or may not be present. This type of respiration persists regardless of the position in which the infant may be held. Roentgenologic examination of the thorax usually is negative. The laryngoscopist is of invaluable aid in the establishment of a definite diagnosis and the instigation of proper treatment of the primary lesion.

Choanal atresia[6,10] is a rare cause of respiratory distress in the newborn. The normal infant resists breathing through the mouth and when forced to do so takes feedings poorly. When the posterior nasopharynx is obstructed by an atretic membrane the infant is restless and respiratory embarrassment is most marked during feedings. The diagnosis of choanal atresia is confirmed by the absence of air passing through the nostrils and the demonstration, by inability to pass a small catheter through the nose, of a membrane across the nasopharynx. Surgical correction greatly relieves the air hunger of the infant and corrects the feeding problem.

Spontaneous pneumothorax[35,36] is an unusual condition in the neonatal period that may or may not be associated with known trauma at birth and may be the cause of severe respiratory difficulty. The degree of difficulty depends directly on the amount of air in the pleural space. In many cases spontaneous pneumothorax is so mild as to require no surgical intervention. Its diagnosis is established in an infant who has respiratory difficulty by absence of breath sounds over the affected side, accompanied by tympany to percussion. The heart and mediastinal structures are shifted away from the side in which the pneumothorax is located. This can be verified by roentgenogram of the thorax in which the collapsed lung may appear as a mass at the hilus and the normal markings of the lung are absent. Surgical measures are indicated immediately and are best carried out by introduction of a small S-shaped needle into the pleural space and maintenance of negative pressure by means of gentle suction. If the lung can be re-expanded and maintained in position, recovery should take place.

Closely associated with pneumothorax is pneumomediastinum[8] or the presence of free air in the mediastinal space. Considerable air must be present before symptoms are produced but if the pneumomediastinum is extensive it may produce pressure on the mediastinal structures, which results in respiratory difficulty. Aspiration of the air should be attempted in an effort to provide a free airway. If the air can be aspirated and its reaccumulation prevented, recovery should take place.

Congenital cysts of the lung are uncommon in the neonatal period and rarely produce extreme respiratory difficulty.[21,31] Cysts of the lung may be single or multiple, thin-walled or multiloculated, and about half of them contain fluid. They may produce respiratory difficulty by their size or they may become infected. Occasionally a cyst increases rapidly in size because of a ball-valve effect. Tension cysts produce rapidly progressive dyspnea that necessitates urgent surgical intervention. Roentgenographic examination of the thorax discloses the presence of a large thoracic lesion that obviously is displacing the other structures. On rare occasions it is extremely difficult to distinguish among pneumothorax, congenital cyst of the lung or diaphragmatic eventration by thoracic roentgenograms alone. If differentiation is difficult it may be necessary to give a small feeding of barium and watch for the presence of the intestinal pattern under the diaphragm. By this means diaphragmatic eventration and diaphragmatic hernia may be readily distinguished from pneumothorax, pneumomediastinum or congenital pulmonary cysts. Several recent articles have described the technique and indications for removal of congenital pulmonary cysts. Some of the cysts have been successfully removed in the first few days or weeks of life.[5,12]

Respiratory obstruction may result from abnormality in the great vessels of the heart. Gross and Neuhauser[17] have classified these lesions and described surgical techniques for their correction. Diagnosis of tracheal or esophageal compression by one of the so-called vascular rings is difficult and requires the help of roentgenoscopy and roentgenograms of the patient in various positions, in addition to careful auscultation of the heart. If the patient presents evidence of respiratory obstruction in the presence of a cardiac lesion and roentgenoscopic examination after ingestion of barium reveals compression of the esophagus, strong suspicion of a vascular abnormality should be entertained.

Congenital diaphragmatic hernia may produce gastrointestinal, respiratory or circulatory symptoms.[13] Diaphragmatic hernias are more common on the left side than on the right. They result from failure of the developing diaphragm to close the normal embryologic channels between the abdominal and pleural cavities. Defects in the pleuroperitoneal fold result in herniation of various abdominal viscera into the thoracic cavity. This results in collapse of the lung on the affected side. Infants who have large diaphragmatic hernias are cyanotic soon after birth. If the hernia is small, intestinal distention may be enough to result in collapse of the lung and cyanosis after feedings are started. Vomiting, although not always present, is common and begins soon after the first feeding. On physical examination it is noted that the side in which the hernia is located has decreased excursions and on careful auscultation intestinal sounds may be heard over the thorax. The heart and mediastinal structures are displaced by the hernia and the collapsed lung. Roentgenographic examination of the thorax after ingestion of barium establishes the diagnosis. Diaphragmatic hernia is a serious condition in the newborn infant; when it is accompanied by cyanosis, feeding difficulty or circulatory changes, surgical intervention is indicated. These infants should undergo operation as soon after birth as the diagnosis is established since the longer the operation is delayed the greater will be the tendency to gaseous distention in the gastrointestinal tract, which adds to the technical difficulty of operation. In the hands of experienced surgeons the results of corrective procedures have been extremely good.

Diaphragmatic eventration[2] is a congenital malformation, usually on the left side, characterized by thinning and marked elevation of the diaphragm so that it fails to function in respiration. This condition may produce dyspnea and cyanosis and is amenable to operation, which usually is not so urgent as in the case of diaphragmatic hernia. If the infant can be maintained in good condition by the use of supportive measures, operation may be delayed until the infant is considerably larger. On the other hand if the infant is having respiratory difficulty and maintenance by the use of oxygen and other supportive measures is difficult, surgical intervention should be carried out without delay.

Gastrointestinal System

Many lesions for which emergency surgical treatment is indicated are found in the gastrointestinal tract during the period just after birth.

Congenital atresia of the esophagus is commonly found at the level of the bifurcation of the trachea and is associated in a great majority of cases with a fistulous connection between the upper end of the distal part of the esophagus and the bifurcation of the trachea.[3,4,22,24,29,30] The diagnosis of atresia of the esophagus should be suspected in all infants who have difficult respiration, excessive mucus in the mouth and throat and attacks of cyanosis during the first few hours of life. Feeding results in immediate exaggeration of the respiratory distress. Once the condition is suspected, the insertion of a small soft rubber catheter into the esophagus confirms the presence of obstruction. A few cubic centimeters of radiopaque oil introduced through the catheter outlines the blind end of the esophagus and the fistula on the thoracic roentgenogram. In the presence of esophageal atresia without tracheo-esophageal fistula, no air is present in the gastrointestinal tract. Esophageal atresia is frequently associated with other abnormalities. The esophageal obstruction causes saliva to spill directly into the trachea, with resultant pneumonia or atelectasis. It is imperative that continuous or almost continuous aspiration of the esophageal pouch be carried out to prevent death from aspiration pneumonitis. When the diagnosis has been established, operation offers the only hope for recovery. The prognosis in esophageal atresia depends on a number of factors, including the amount of pneumonitis, the type of abnormality, the age and weight of the infant and the experience of the surgeon. In recently reported cases, the mortality rate has improved rapidly with increased experience in the management of these patients.[4,22]

Atresias of the gastrointestinal tract may occur at any location.[23] These lesions produce complete intestinal obstruction and are associated with vomiting that begins soon after birth. The rapidity of onset of vomiting is an indication of the location of the obstruction. Obstruction in the upper part of the gastrointestinal tract produces early vomiting with relatively little abdominal distention, while obstruction in the lower part produces marked abdominal distention, with vomiting that occurs later, after feedings are started. The vomiting of intestinal obstruction is projectile and persistent in contrast to the spitting or regurgitation commonly observed in infants who have poorly regulated feedings. Extreme dehydration and loss of weight are associated with any type of intestinal obstruction. In the presence of complete intestinal obstruction the infant passes little or no stool. The stool consists of dark meconium that fails to show cornified epithelial cells or lanugo hair on microscopic examination. Intestinal patterns soon develop on the abdominal wall and distention is progressive. If intestinal obstruction as the result of atresia or any other cause is suspected barium should not be given. A scout (preliminary survey) film of the abdomen confirms the presence of intestinal obstruction and frequently aids in the localization of the site of obstruction. Once the diagnosis of intestinal atresia is established efforts should be made to carry out surgical correction at the earliest possible moment. Infants withstand surgical procedures better during the first few hours after birth than during the next few days or weeks. If the obstruction is not relieved within a few days abdominal distention becomes marked, regulation of fluid and electrolytes is made difficult and perforation with generalized peritonitis and death results. The type of operation that is necessary depends on the findings at the time of exploration. More than one region of atresia may be present or other congenital anomalies may be found. The mortality rate after surgical intervention for intestinal atresia is high, perhaps 50 per cent, but many of the deaths result from conditions not related to the atresia.

Intestinal stenosis is an uncommon type of lesion of the gastrointestinal tract that may produce partial or complete intestinal obstruction. If obstruction is complete, the clinical picture cannot be distinguished from that of intestinal atresia. Partial intestinal obstruction as a result of congenital stenosis is rare in the newborn.

Intestinal obstruction in the newborn infant may be associated with numerous lesions, such as malrotation, intussusception,[32] volvulus, meconium ileus,[34] reduplications[15] or functional obstruction.[41] In such cases it is frequently difficult or impossible to distinguish between these lesions before operation. Little indication exists for delay in an effort to establish the exact type of obstruction since surgical treatment is indicated in any case.

Meconium ileus is a condition associated with cystic fibrosis of the pancreas, now named "mucoviscidosis" by some authors. The absence of pancreatic enzymes results in the meconium being extremely thick and tenacious, so that it cannot be passed through the gastrointestinal tract. This condition frequently is associated with volvulus, perforation or other lesions of the gastrointestinal tract. If the condition is suspected because of the familial incidence of the disease, a small specimen of stool obtained before operation may be suspended in a 5 per cent solution of pancreatin.[11] The tenacious meconium of patients who have pancreatic fibrosis rapidly dissolves in this solution. At the time of operation it may be necessary to use the method of Hiatt and Wilson[18] to relieve the obstruction. These observers were able to relieve the intestinal obstruction of meconium ileus by irrigating the obstructed portion of the bowel with isotonic solution of sodium chloride through a small catheter at the time of exploration. When the obstruction has been relieved the prognosis remains poor since the infants later die from severe pulmonary disease.

Anal atresia or imperforate anus is usually diagnosed by inspection; it causes progressive abdominal distention, vomiting, dehydration and absence of stools. This condition is frequently associated with congenital malformation of the genitourinary system; stool may pass into the bladder, vagina, perineum or ureters. Surgical correction must be carried out as soon as possible. An accurate diagnosis as to the location of the obstruction may be obtained by the technique of Wangensteen and Rice.[39] A small lead marker is taped over the anal dimple and a roentgenogram is made with the baby suspended by his feet. On rare occasions the connection between the rectum and the bladder, vagina or perineum may be sufficiently large to justify dilatation of this sinus tract so that it may serve as an anus until more definitive surgical treatment may be carried out. The decision as to the type of operative procedure must rest with the judgment of the surgeon in each case.

Hypertrophic pyloric stenosis is a common condition in newborn infants. It usually occurs in males and frequently is encountered in the firstborn child. It is associated with gradually increasing thickening of the pyloric sphincter and is characterized clinically by vomiting, a palpable tumor in the region of the duodenal bulb, presence of peristaltic waves, loss of weight, infrequent stools and disturbance in electrolytes if the condition remains uncorrected. Operation results in prompt improvement and should not be delayed beyond the time necessary for preparation.

Omphalocele or umbilical hernia is a congenital malformation characterized by herniation of abdominal contents into the umbilical cord.[26] The structure is covered by a translucent membrane of peritoneum and amniotic membrane. This covering may rupture at the time of delivery, which results in eventration and peritonitis. If the omphalocele is not covered within a few hours after birth it will dry out, become infected and rupture, with production of fatal peritonitis. Surgical correction should be attempted as soon after birth as possible. If the omphalocele is large and its contents cannot be returned to the abdominal cavity, skin should be approximated over the defect and secondary repair of the umbilical hernia done at a later date. Welch[40] has recommended the use of isografts to protect the thin-walled sac against infection. The mortality rate depends on the size of the omphalocele, the contents of the sac and the ease with which the contents may be returned to the abdominal cavity. Under ordinary circumstances a 50 per cent survival rate after operation should be expected.

Urinary System

Congenital malformations of the urinary system are quite common but rarely are an indication for emergency operation in the newborn.

Neoplasms

Neoplasms are rare in the newborn infant. Wilms' tumors,[16] teratomas,[14,33,38] neuroblastomas, medulloblastomas, sarcomas[1] and others have been described. If a neoplasm is found in infancy the same indications for surgical intervention exist as in later life.

Bibliography

1. Arnstein, L. H.; Boldrey, Edwin, and Naffziger, H. C.: A case report and survey of brain tumors during the neonatal period. J. Neurosurg., 8:315-319 (May) 1951.
2. Beck, W. C.: Etiologic significance of eventration of the diaphragm. Arch. Surg., 60:1154-1160 (June) 1950.
3. Belsey, R. H. R., and Donnison, C. P.: Congenital atresia of the œsophagus. Brit. M. J., 2:324-328 (Aug. 5) 1950.
4. Bigger, I. A.: The treatment of congenital atresia

of the esophagus with tracheo-esophageal fistula. Ann. Surg., 129:572-587 (May) 1949.

5. Burnett, W. E., and Caswell, H. T.: Lobectomy for pulmonary cysts in a fifteen-day-old infant with recovery. Surgery, 23:84-91 (Jan.) 1948.
6. Cohen, H. J., and Witchell, I. S.: Bilateral congenital choanal atresia in newborn. Am. J. Dis Child., 83:328-332 (Mar.) 1952.
7. Dandy, W. E.: Extirpation of the choroid plexus of the lateral ventricles in communicating hydrocephalus. Ann. Surg., 68:569-579 (Dec.) 1918.
8. Effron, B.: Pneumomediastinum (mediastinal emphysema) in a premature infant. J. Pediat., 41:94-96 (July) 1952.
9. Elvidge, A. R., and Jackson, I. J.: Subdural hematoma and effusion in infants; review of fifty-five cases. Am. J. Dis. Child., 78:635-658 (Nov.) 1949.
10. Evans, P. R.: Bilateral choanal atresia. Proc. Roy. Soc. Med., 41:454-456 (July) 1948.
11. Farber, Sidney: The relation of pancreatic achylia to meconium ileus. J. Pediat., 24:387-392 (Apr.) 1944.
12. Gross, R. E.: Congenital cystic lung; successful pneumonectomy in a three-week-old baby. Ann. Surg., 123:229-237 (Feb.) 1946.
13. Gross, R. E.: Congenital hernia of the diaphragm. Am. J. Dis. Child., 71:579-592 (June) 1946.
14. Gross, R. E.; Clatworthy, H. W., Jr., and Meeker, I. A., Jr.: Sacrococcygeal teratomas in infants and children; a report of 40 cases. Surg., Gynec. & Obst., 92:341-354 (Mar.) 1951.
15. Gross, R. E.; Holcomb, G. W., Jr., and Farber, Sidney: Duplications of the alimentary tract. Pediatrics, 9:449-468 (Apr.) 1952.
16. Gross, R. E., and Neuhauser, E. B. D.: Treatment of mixed tumors of the kidney in childhood. Pediatrics, 6:843-852 (Dec.) 1950.
17. Gross, R. E., and Neuhauser, E. B. D.: Compression of the trachea or esophagus by vascular anomalies; surgical therapy in 40 cases. Pediatrics, 7:69-88 (Jan.) 1951.
18. Hiatt, R. B., and Wilson, P. E.: Celiac syndrome. VII. Therapy of meconium ileus; report of eight cases with a review of the literature. Surg., Gynec. & Obst., 87:317-327 (Sept.) 1948.
19. Hiller, R. I.: Simple technique for inserting a silk seton; with report of its use in a case of communicating hydrocephalus and description of a seton needle and suggestions for its use. Am. J. Surg., 20:119-121 (Apr.) 1933.
20. Ingraham, F. D., and Matson, D. D.: Subdural hematoma in infancy. *In* Advances in pediatrics. Vol 4, pp. 231-263. New York: Interscience Publishers, Inc., 1949.
21. Jones, J. C.: Indications for pulmonary resection in infants and children. California Med., 72:352-356 (May) 1950.
22. Ladd, W. E.: Congenital anomalies of the esophagus. Pediatrics, 6:9-19 (July) 1950.
23. Ladd, W. E., and Gross, R. E.: Abdominal Surgery of Infancy and Childhood. 455 pp. Philadelphia: W. B. Saunders Company, 1941.
24. Ladd, W. E., and Swenson, Orvar: Esophageal atresia and tracheo-esophageal fistula. Ann. Surg., 125:23-40 (Jan.) 1947.
25. Leahy, L. J., and Butsch, W. L.: Surgical management of respiratory emergencies during the first few weeks of life. Arch. Surg., 59:466-483 (Sept.) 1949.
26. Maguire, C. H.: Surgical management of omphalocele. Arch. Surg., 59:484-490 (Sept.) 1949.
27. Matson, D. D.: New operation for treatment of communicating hydrocephalus. J. Neurosurg., 6:238, 1949.
28. Nosik, W. A.: Treatment of hydrocephalus by ventriculomastoidostomy. J. Pediat., 37:190-194 (Aug.) 1950.
29. Potts, W. J.: Congenital atresia of the esophagus with tracheoesophageal fistula. J. Thoracic Surg., 20:671-680 (Nov.) 1950.
30. Potts, W. J.: Congenital atresia of the esophagus. Antethoracic placement of the stomach followed by intrathoracic transplantation. J. Thoracic Surg., 20:681-688 (Nov.) 1950.
31. Ravitch, M. M., and Hardy, Janet B.: Congenital cystic disease of the lung in infants and in children. Arch. Surg., 59:1-36 (July) 1949.
32. Ravitch, M. M., and McCune, R. M., Jr.: Intussusception in infants and children; analysis of 152 cases with a discussion of reduction by barium enema. J. Pediat., 37:153-173 (Aug.) 1950.
33. Riker, William, and Potts, W. J.: Sacrococcygeal teratoma in infancy; a report of six cases. Ann. Surg., 128:89-100 (July) 1948.
34. Rogers, J. D.; Baggenstoss, A. H.; Musgrove, J. E., and Kennedy, R. L. J.: Intestinal obstruction associated with fibrocytic disease of the pancreas; report of three cases. Minnesota Med., 34:1075-1081; 1101 (Nov.) 1951.
35. Rosemond, G. P., and Caswell, H. T.: Pyopneumothorax in the first month of life with recovery; two case reports. Am. J. Surg., n.s. 68:383-387 (June) 1945.
36. Strain, J. E., and Connell, J. R.: Pneumothorax in the newborn infant. J. Pediat., 36:495-500 (Apr.) 1950.
37. Svien, H. J.; Love, J. G.; Dodge, H. W., Jr., and Keith, H. M.: "Evaluation of "seton" procedure in the treatment of infantile communicating hydrocephalus. J. Pediat., 40:298-302 (Mar.) 1952.
38. Walker, J. M., Jr., and Foster, R. J. P.: Sacrococcygeal teratoma in the newborn. Arch. Surg., 61:1138-1144 (Dec.) 1950.
39. Wangensteen, O. H., and Rice, C. O.: Imperforate anus; a method of determining the surgical approach. Ann. Surg., 92:77-81 (July) 1930.
40. Welch, K. T.: The use of a homograft in the surgical treatment of large omphaloceles. Surgery, 29:100-104 (Jan.) 1951.
41. Zuelzer, W. W., and Wilson, J. L.: Functional intestinal obstruction on a congenital neurogenic basis in infancy. Am. J. Dis. Child, 75:40-64 (Jan.) 1948.

PATIENT INSTRUCTION IN TUBERCULOSIS

Provision for individual patient instruction in the significance of asymptomatic tuberculous lesions of small extent, or indeed of all inactive or suspected tuberculosis, is a great need which has grown out of mass survey examinations. This can be provided only by giving both clinic physicians and nurses the time to give each patient the full explanation he deserves.—Howard M. Payne, M.D., Philip Enterline, and Julia Heuck, *The American Review of Tuberculosis,* November, 1952.

DERMATITIS FROM INDUSTRIAL OILS AND CHROMATES

RODNEY F. KENDALL, M.D.
Great Falls, Montana

THIS DISCUSSION of dermatitis caused by oils will be a brief review of what little information has appeared in medical literature, a discussion of some of the known causative factors, a smattering of histopathology of the lesions, a report of a few of my cases, especially as related to the railroad industry, and will pose a great many problems for future study.

In most of the standard textbooks there is a sentence to the effect that industrial dermatitis is an entity, followed by a list of chemicals and the type of eruption usually produced by each, a statement that avoidance of the irritant usually allows healing to take place and that re-exposure will cause recurrence of the eruption, but no fundamental information about the disease.

One of the first good accounts appeared about 1918, written about munition workers; the article might well have been written in 1951. It described the eruption exactly as we see it now, and gave about the same advice. Schwartz and Tulipan in "Occupational Diseases of the Skin" list petroleum, oils, tar, paraffins and halogen containing oils, cutting oils, sulphonated oils and some of the specific plant oils, tung, mustard, et cetera. There is no mention of the fundamental pathology. The first concise and easily understandable information comes in the Manual of Dermatology by Donald Pillsbury, printed for the use of the Army and Navy in 1942. In 1946 Klauder and Hardy produced a study of 532 cases of occupational dermatitis gleaned in 1,184 cases of skin diseases in industrial patients presenting claims for compensation, of which only 11 per cent were related to oils.

Our problem today, therefore, is to summarize the existing information on dermatitis due to oils. Solvents cause the largest number of cases of dermatitis which are due to a primary irritant. A primary irritant is a substance which is capable of producing a reaction in the skin of a majority of subjects who never have been previously exposed to the specific agent. The commonest irritants are the light petroleum solvents, especially type wash, mineral oil, kerosene and gasoline. Chlorinated hydrocarbons, turpentine, and solvents derived from coal tar follow closely but less frequently. The irritant action is directly proportional to the boiling range, and inversely proportional to the defatting action. Kerosene and solvents of low boiling range uniformly exert irritant action. Solvents containing compounds of chromium and sulfuric acid frequently cause eczematous reaction. Particularly we should mention the role of trauma in predisposing the dermatologic complications of injury. Apparently the skin can tolerate a certain exposure to these irritants, but when injured, cannot tolerate the usual exposure and provides a focus for the onset of dermatitis.

Of the eruptions usually seen in relation to contact with oil, the acneform types predominate. The first sign is the appearance of black dots or comedones in the follicles. A conical papule with a horny plug appears, followed by a tiny ring of inflammatory reaction and it soon turns into a pustule. Very little material can be expressed from the pustule, and healing is slow. Occasionally the pustule is large enough to be called a furuncle and when many are grouped in one area, the result may be incapacitating. The sites of predilection of these lesions are roughly located where there is heavy, coarse hair in an area exposed to friction: nape and sides of neck, forearms, anterior thighs, scrotum, calves. In my experience the reddish or sandy haired people are most susceptible but certain dark skinned workers have been seen. These, as I remember them, were handicapped by low intellect, and/or language difficulties.

In Montana we have another complicating factor that may not be seen in other areas. Most of our younger workers who are exposed to dirt and oils like to wear denim jeans. The popular style in Montana is the skin-tight cowboy jeans, which fit snuggly over the buttocks, thighs and calves. When these jeans are thoroughly impregnated with the offending oil, a mild folliculitis commonly appears in these areas. I have never seen it severe enough to be called furunculosis, but have

---

From the Department of Dermatology, Great Falls Clinic, Great Falls, Montana.

Read at the annual meeting of the Great Northern Railway Surgeon's Association, Glacier Park, Montana, June 29, 1951.

occasionally had to warn the patient to avoid grease, and to wear clean jeans.

Until O'Brien from Australia produced his classic article in the *Journal of Investigative Dermatology* in August, 1950, there had been no definitive study of the pathology of oil folliculitis. His study was directed chiefly to the etiology of poral closure, but inevitably his attention was called to the pilosebaceous follicles. He applied cotton pads moistened in kerosene to a test area on one side of the abdomen for fifteen minutes each day. The other side of the abdomen was treated in the same way except that the kerosene had been presaturated with anhydrous lanolin. After three days the test area showed the first elements of a rash composed of small clear superficial vesicles on a red base. After five more days during which only one more treatment was given, the rash became more florid, more infiltrated, and more like miliaria. Biopsies were taken from the test and control areas. In only one instance of thirty experiments was any rash produced on the control side; it was of a macular type. He made 600 serial sections from five biopsies. Three biopsies were from test areas, and two from control areas. The sections suggested that the solvent penetrated through the pilosebaceous opening causing an intense inflammatory reaction with internal and external infiltration of the follicle. Neutrophiles, monocytes and lymphocytes distended and infiltrated the neck of the follicle. Parakeratosis in the area surrounding the opening of the follicle occluded it. It seemed to show that the lipoid solvent caused intercellular edema and vesicle formation with subsequent infiltration and follicle plugging. However, the amount of irritation and reaction depends upon the properties of the chemical used. Kerosene which was saturated with anhydrous lanolin caused little or no reaction.

It is to be emphasized here that complicating factors of staphylococcic contamination, and low personal hygiene may prolong and aggravate the oil folliculitis. Other factors including improper attempts at treatment, previously existing dermatoses such as atopic or nummular eczema, psoriasis, lichen planus, acne vulgaris, or coexisting dermatitis venenata may confuse the issue.

O'Brien also experimented with soaping the normal skin with the ordinary brands of toilet soap. The histopathologic picture was the same as the areas treated with kerosene, but to a much less violent degree.

In summary we can say that persistent exposure to low boiling range solvents with a high defatting action, and over-exposure to the defatting action of any soap and particularly the alkaline detergents will cause a direct action upon the pilosebaceous apparatus with poral closure and folliculitis.

Treatment of the eruption, once it appears, should be directed in a logical fashion at the diametric opposite of the cause. The area should be cleansed of offending substances once, thoroughly, by a neutral or slightly acid detergent. Antibiotics may be used parenterally to combat the secondary infection that usually complicates the original eruption. In severe cases wet compresses with Burow's solution diluted 1:16, half saturated solution of boric acid, or even plain water, may be used. Removal of the patient from the offending substances, or vice versa, is necessary until the skin is well. Time is required to heal these follicular reactions—at least two and frequently four weeks.[1] In the hands of the dermatologist, small doses of x-ray therapy seem to shorten the period of disability, but x-ray must be given only by those familiar with its use, and with machines designed for superficial dermatologic therapy. In general, one should avoid applications of any ointment to the affected areas, though exceptions to this statement may occur.

When the patient returns to work, the offending agents must be avoided. Clean clothing, gloves, different detergents, and different solvents may make the entire difference between an efficient workman and one who is half-sick. In the workman whose cerebration is too slow to think through the problem, an attempt must be made to remove the offending substances completely from his use, or transfer must be made to another department.

In reporting my own experience with industrial dermatitis at Doctor Webb's request, particularly as far as the Great Northern Railway is concerned, I have had small material to report. Except for exposure to poison ivy, relatively few patients have come to my attention. Only three have been major problems. The *first,* a man with limited understanding of our language and ability to follow directions, as well as having a low level

(Continued on Page 92)

CORONARY INSUFFICIENCY

BURTIS J. MEARS, M.D.
Saint Paul, Minnesota

WHEN the cardiac muscle receives an inadequate supply of oxygen, pain and usually, but not always, electrocardiographic changes result, and the condition is called coronary insufficiency. This state of affairs may be either relative or absolute. The term "relative coronary insufficiency" is reserved for myocardial hypoxia occuring despite patent coronary arteries and is due to insufficient blood or deficient blood reaching the normal coronary arteries.

Shock, with its lowered blood pressure decreasing the coronary flow, and severe anemias, with the oxygen content of the blood lowered, cause only minor cardiac symptoms as compared to the severity of the primary condition. Hyperthyroidism, on the other hand, with its increased metabolic rate, hypertension, and elevated pulse rate, may actually cause a cardiac failure, and any resultant myocardial damage can be blamed chiefly on an insufficient supply of oxygen to the muscle fibers.

The presenting symptoms in paroxysmal tachycardia may be angina. The very rapid ventricular rhythm in paroxysmal tachycardia demands an increased coronary flow, but the coronary flow is actually decreased because of the shortened filling time of the nutrient arteries. As the tachycardia continues, anginal pain becomes a dominant symptom, and St-t changes in the electrocardiogram, typical of myocardial damage, occur.

These examples of relative coronary insufficiency are reversible when the primary disease is corrected.

In absolute coronary insufficiency the quality of the blood reaching the nutrient arteries is normal but the arteries are too narrow to deliver an adequate supply. Aside from the rare luetic aortitis causing narrowing of the coronary ostia, the chief cause of absolute coronary insufficiency is atherosclerosis.

Factors of etiological importance in the development of atherosclerosis are:

1. *Age.*—During the first year of life thickening of the intima of the coronary arteries is already apparent and this continues with age but causes little if any narrowing of the lumina.[8] Yellow lipoid deposits in the intima are found in 95 per cent of children over six months of age. These atheromatous patches increase in the first twenty years of life and in the following several decades decrease in size and number.[4] These anatomical changes appear to be reversible and could be due to the increased cholesterol intake and/or the poorly developed cholesterol metabolism in children. It is important to note that one third of the people over the age of eighty show only minimal arteriosclerosis. Therefore this disease must not be considered inevitable with advancing years.[3]

2. *Hypertension.*—As a general rule, the higher the arterial pressure the faster the atherosclerosis developes. Wherever the pressure is the highest in any given individual the more marked the degenerative changes will be. Thus in the arch of the aorta and in the vessels of the lower extremities degenerative changes are more marked. Atherosclerosis in the pulmonary circulation is rare until the pressure is raised as in emphysema, mitral stenosis and pulmonary fibrosis. When a cirrhotic liver raises the pressure in the portal systems, sclerosis of the portal veins is common. As a rule, therefore, all other factors being equal, the patient with hypertension will have more coronary sclerosis.

3. *Congenital or Inherited Tendency.*—At advanced age the hereditary element in coronary disease is lacking but when the condition is found before the age of fifty, a family history is usually obtainable.[13] In one-third of the adult population the right and left coronary arteries are of equal size and in this group coronary disease is minimal. In 50 per cent of the cases the right coronary artery is preponderant and in one-sixth of the cases the left artery is the larger, and it is in this latter group that we have the poorest prognosis in relation to coronary deaths. If the preponderant vessel is occluded the remaining hypoplastic artery is often incapable of compensating for the closed vessel.[16] The relative size of the coronary vessels is controlled by hereditary factors. Faulty

---

Read at the Annual Meeting of the Southern Minnesota Medical Association, Austin, Minnesota, September 8, 1952.

cholesterol metabolism is an etiological factor in possibly all cases of atherosclerosis and certainly is a defect in premature sclerosis and should be considered as a congenital defect.

4. *Sex.*—Coronary disease occurs five times as frequently in men as in women.[11] Under the age of forty the ratio of incidence is twenty men to one woman.[5] There must be some hormonal influence that protects the arteries in women against the invasion of cholesterol and the resulting atherosclerosis. Women do not develop the disease even during the recurring high chloesterol levels of pregnancy.[19]

5. *Constitutional Factors.*—The male who has a tendency towards female structure, namely wide hips, lack of body hair, and only moderate muscular development, seems to have a much lower incidence of coronary disease. In comparison the barrel chested hairy male with narrow hips, massive muscles, and thick forearms is prone to atherosclerosis. This man looks older than his chronological age.[12] Here again the relation of the androgenic to the estrogenic hormones would appear to be of vital importance. A relatively high ratio of androgenic hormones over the estrogens would appear to be conducive to atherosclerosis.

6. *Cholesterol Metabolism.*—There is a higher incidence of coronary disease wherever there is a disease causing hypercholesteremia, such as severe nephrosis, uncontrolled diabetes, hereditary xanthomatosis, myxedema, and Cushings syndrome. The incidence of atherosclerosis in experimental animals fed in high cholesterol diet is well known. Deaths due to atherosclerosis decreased in Sweden during the economic depression of 1930 and during the war years, and was attributed to the high starch low fat diet. Atherosclerosis is uncommon in patients in wasting diseases such as starvation in carcinomatosis. In a study entitled "Resorption of Arterial Atheromatosis Deposits in Wasting Disease," Wilens concludes: "It seems that their atherosclerotic deposits had been resorbed and their atherosclerosis had been a reversible process."[18] The importance of a high fat diet as an important etiological factor in atherosclerosis is still debatable but the stakes are high and the works and opinions of Gofman, Katz,[2] Boas and others, and the data of insurance companies[1,14] cannot be ignored.

The chief criticism of a low cholesterol diet in a given individual has been that some coronary patients show a low blood cholesterol, and if the cholesterolemia is high it often shows little or no reduction on a strict dietary regime. Goffman has stated that large lipo-protein molecules are found always in those patients with atherosclerosis and with weight reduction the number of these fat molecules decrease in the blood.[6]

Tobacco, alcohol, hard physical work, and the stress of living have not been proven to cause atherosclerosis. Physicians have long liked to think that the stress of their particular occupation has made them especially susceptible to early coronary disease. This has not been substantiated by recent studies.[10]

In the past few years the length of life after the diagnosis of coronary disease has increased because of improved treatment and earlier diagnosis. The chief symptom in the early coronary patient is often anxiety. To allay this anxiety, the doctor himself must be convinced that an optomistic outlook is justified.

The only treatment of value is prevention of the atherosclerosis before the artery becomes narrowed. Weight reduction is imperative and as the patient restricts his dietary intake he can be gradually trained to lower the fat content in his diet. Diabetics must be rigidly controlled with a rather liberal carbohydrate intake of at least 150 to 250 gm. and a low fat intake. No diabetic can be adequately controlled without two to three urine tests per day and the insulin dosage adjusted to these tests. Increased exercise in the controlled diabetic calls for less insulin, but exertion in the uncontrolled patient demands a larger dosage of insulin. The well-controlled diabetic contemplating a golf game or a hunting expedition should take less insulin and carry candy. There is an increase in statistical proof that adequate diabetic management decreases the incidence of arterial disease.[9,15,17]

Hypertension must be treated but great care must be exercised in the use of the new miracle drugs such as Hexamethomium, because the sudden dramatic lowering of the blood pressure and the ensuing prolonged sudden cardial ischemia may cause infarction. The patient may need a high systolic pressure to maintain adequate coronary flow. Although anxiety in itself does not cause or aggravate atherosclerosis, it is of importance if it elevates the blood pressure.

The activities required in the normal processes of daily living are all that are required for good health. Exercise over and above these minimal daily requirements in no way improve the general health. The coronary patient must be warned to limit his exercise below the threshold of anginal pain. If simple functions such as climbing stairs bring on pain, nitroglycerine should be used before this exercise.

The barrel chested male in the fifth decade of life who is becoming obese and carries a high diastolic pressure will often be found with a hemoglobin well over 100 per cent and a very low sedimentation rate. This is the patient that could well have a decrease in clotting time and be susceptible to intra-arterial thrombosis and should be encouraged to be a blood donor as often as possible. It could well be psychological, but these patients often admit to a sense of well being when the mild secondary polycythemia is relieved by phlebotomy.

There is no convincing proof that gallbladder disease or peptic ulcer occur more frequently in the coronary patient than in the otherwise normal individual. Gallbladder disfunction and distress from hyperacidity or ulcer seems to precipitate anginal attacks, and these two conditions must be remedied in coronary disease even if surgery is necessary.

The pain, usually nocturnal or following heavy meals, of diaphragmatic hernia must not be confused with coronary pain.

The only drugs of value in treating coronary insufficiency are sedatives and nitroglycerine. Each year a list of new drugs becomes available but are usually quickly discarded. Aminophyllin and papaverine are two of the most commonly used drugs and have no proven value except for the phenobarbital that is usually incorporated with these drugs. Nitroglycerine, freshly prepared, should be used liberally and the patient encouraged to rely on it at the slightest indication.

Conclusions

Coronary insufficiency is the result of narrowing of the coronary arteries because of atherosclerosis. The disease occurs as the patient ages and is apparently due to faulty cholesterol metabolism, the fault apparently being a congenital defect markedly affected by the androgen-estrogen ratio, and aggravated by hypertension and all diseases and dietary indiscretions causing hypercholesterolemia. Treatment consists of control of conditions causing hypercholesterolemia, rigid weight control, and relief of pain with nitroglycerine.

Bibliography

1. Armstrong, D. B., et al: Obesity and its relationship to health and disease. J.A.M.A., 147:1007 (Nov. 10) 1951.
2. Atherosclerosis. A symposium. Circulation, 5:98, 1952.
3. Boas, E. P.: Aging of the cardiovascular system. Bull. New York Acad. Med., 16:607, 1940.
4. Ehrlich, W., et al: A study of coronary arteries. Am. J. Anat., 49:241, 1931.
5. Glendy, R. E., et al: Coronary disease in youth. J.A.M.A., 109:1775, 1937.
6. Gofman, J. W., and Jones, H. B.: Obesity, fat metabolism and cardiovascular disease, Circulation, 5:514, 1952.
7. Grimson, K. S., et al: Caution with regard to use of Hexamethonium and "Apresoline." J.A.M.A., 149:215 (May 17) 1952.
8. Gross, L., et al: Histology of the coronary arteries and their branches in the human heart. Am. J. Path., 10:253, 1934.
9. Joslin, E. P.: Status of living diabetics with onset under forty years of age. J.A.M.A., 147:209 (Sept. 15) 1951.
10. Levine, S. A., and Hindle, J. A.: Coronary heart disease among physicians. New Eng. J. Med., 233: 657, 1945.
11. Levy, H., and Boas, E. P.: Coronary artery disease in women. J.A.M.A., 107:97, 1936.
12. Metabolic Individuality. Milwaukee: Lakeside Laboratories, Inc., 1951.
13. Musser, J. H., and Barton, J. C.: Familial tendency of coronary disease. Am. Heart J., 7:45, 1931.
14. Overweight shortens life. Metropolitan Life Insurance Company. Statistical Bulletin, 32:10 (Oct.) 1951.
15. Root, H. F., et al: Factors in the rate of development of vascular lesions in the kidneys, retinae and peripheral vessels of the youthful diabetic. Am. J. Med. Sc., 221:479, 1951.
16. Schlesinger, M. J.: Relation of anatomic pattern to pathological conditions of the coronary vessels. Arch. Path., 30:403, 1940.
17. Thaler, R. W., and Wornas, C. G.: Coronary arteriosclerosis in diabetics. Am. J. Digest Dis., 19:33 (Feb.) 1952.
18. Wilens, S. D.: Resorption of arterial atheromatous deposits in wasting disease. Am. J. Path., 23:793, 1947.
19. Willius, F. A.: Sex discrepancy in coronary disease. Staff Meetings, Mayo Clinic, 14:751 (Nov. 22) 1939.

DISTURBANCES OF THE THYROID OTHER THAN HYPERTHYROIDISM

MARTIN A. NORDLAND, M.D. and MARTIN NORDLAND, M.D.

Minneapolis, Minnesota

INDICATIONS for the operative treatment of goiter, besides that of hyperfunction, are the removal of adenomata to improve the appearance of the neck, the relief of symptoms of tracheal compression caused by simple nodular goiters, as well as the prophylaxis and cure of malignancy and other pathological changes. Consideration should be given to the esthetic aspect of the disease raised by the patient, since a goiter which is unsightly is nearly always clinical as well. It very often involves the trachea and large blood vessels of the neck with harmful effects on the patient. Changes in size or contour of the thyroid gland causing cosmetic disturbances or pressure on the recurrent laryngeal nerves or those resulting in substernal and intrathoracic projections of gland tissue, are, as a rule, readily diagnosed and their treatment is just as readily indicated. In this type of case roentgenographic as well as laryngoscopic examination are of considerable importance in the preoperative management and in the surgical treatment of the disease. It has been estimated that in instances in which the goiter has produced symptoms of a mechanical nature, damage results to one or the other of the vocal cords in about 5 per cent of cases.

There are some conditions, namely, chronic thyroiditis of Riedel's struma, tuberculosis and sudden hemorrhage into a benign adenoma, which are often confused with malignant tumors of the thyroid. A correct preoperative diagnosis is most important in the surgical management of these patients.

In the differential diagnosis, the most noteworthy, although rare, is the so-called Riedel's struma, or woody thyroiditis. The etiology of this disease has been variously ascribed to tuberculosis, syphilis, and other types of chronic inflammation, but no convincing evidence of any of these factors has been presented. In this disease, the gland is so hard that its consistency has been described as stony or iron-like. However, its contour is smooth and rounded, the normal shape of the gland is retained, there is no hoarseness and there is little or no fixation of the gland to surrounding structures. There is no evidence of extension to regional nodes and distant organs. Malignant tumors are usually nodular and unilateral, they frequently metastasize early and soon involve the recurrent laryngeal nerves so that hoarseness and dyspnea are relatively common symptoms. The indications for surgical removal of the gland affected by woody thyroiditis consist mainly of pressure symptoms such as dyspnea and dysphagia. When surgery is undertaken for this disease it should, if possible, be limited to partial resection of the gland, since, as a rule, very little functioning gland tissue is left and myxedema may result. Late in the disease myxedema is common but this may be controlled satisfactorily by the oral administration of thyroid gland substance.

Tuberculosis of the thyroid, while extremely rare and of little clinical importance, is occasionally confused with malignancy. It has been noted that tuberculosis occurs frequently in association with increased functional activity of the gland already involved with hyperthyroidism. Whether the hypertrophic gland is rendered more susceptible to invasion by the bacillus of tuberculosis, or whether the infection stimulates the parenchyma to abnormal activity resulting in hyperthyroidism has not been determined. The disease is most frequently a part of a generalized tuberculosis or secondary to tuberculous infection elsewhere in the body. The result may either be a frank abscess formation or a chronically inflamed fibrotic mass. Microscopically, the latter type shows tubercles intra or interfollicularly. The surgical treatment is incision of the abscess or lobectomy, depending upon the condition encountered, and the prognosis is excellent.

In most cases of hemorrhage into a thyroid adenoma the history gives a correct diagnosis. Whether the patient had previously noted a goiter or not, the thyroid suddenly increases in size. This swelling, of a rapid onset, is associated with marked local tenderness and occasionally by symptoms of choking and pressure in the neck. Because the tumor following hemorrhage usually tends to subside over a period of a few days or weeks, it is readily differentiated from malignancy.

Malignant tumors of the thyroid are not extremely rare since the statistical studies show that from 3 to 17 per cent of all nodular growths in this gland are carcinoma. The greatest hope of cure of malignant lesions of the thyroid lies in the prophylactic removal of adenomas. The usually quoted textbook symptoms of cancer of the thyroid are really those of the end stages of the disease. A rapidly growing goiter with irregular lobulation distorting the usual symmetrical shape of the thyroid gland is rarely present until the condition is hopeless.

According to most investigators malignancy of the thyroid arises in about 90 per cent of the cases in a pre-existing nodular goiter usually in an individual in the fifth or sixth decade. As long as the growth remains inside the capsule, no symptoms are produced, so the exact time at which the malignancy begins cannot be determined. The goiterous enlargement is occasionally the only symptoms of which the patient is aware. Pressure on the recurrent laryngeal nerve or direct extension of the growth into the trachea results in hoarseness and cough, and if the esophagus is encroached upon, dysphagia is present. Hoarseness is a significant symptom since it usually means that the tumor has broken through the capsule and that the nerve is actually invaded or pressed upon. In non-malignant tumors of the neck, involvement of the recurrent laryngeal nerve is very rare.

The question of the possibility of carcinomatous lesions of the thyroid producing hyperthyroidism has not been completely settled although Pemberton states that this condition practically never takes place. When there is enlargement of the gland with hyperthyroidism, malignancy is rare, although in Pemberton's series, 87 per cent of the cases of malignancy were associated with benign nodules elsewhere in the gland. It is these benign adenomas which are most likely the cause of hyperthyroidism. In many instances operations are undertaken for supposedly benign adenomatous goiters only to find, by immediate microscopic examination or recurrence of the lesion at a later date, that the neoplastic change had already taken place. Needless to say, it is in these cases that are not diagnosed clinically that the best results may be expected. In early cases in which the carcinoma is confined within the capsule, removal of all of the growth without rupture of the capsule is sufficient. After malignancy has been diagnosed, the treatment of choice is radical resection, and, if this is impossible, irradiation alone or combined with surgical removal is strongly indicated. It may be stated that surgery alone in this condition is usually not justifiable even if the malignant lesion is entirely removed, although in many instances, radical resection has proved satisfactory. The latter is especially true of the papillary adeno-carcinomata, which grow slowly, and tend to remain encapsulated for a long time. In the more malignant types, radio-therapy certainly offers additional protection against the extension of the disease. Tracheotomy is frequently necessary, especially in the late stages of the disease, as a palliative measure.

The prognosis of carcinoma of the thyroid has been shown by Pemberton and Fricke and others to be as good as that of similar lesions of any other organ with the exception of the lip and the skin.

The management of the patient with hyperthyroidism does not come within the scope of this discussion. However, the clinician should keep in mind some practical facts concerning diagnosis and treatment. He should know that the rapid pulse comes early in hyperthyroidism and that it is more dependable as a diagnostic factor than the basal metabolic rate. He should remember that a high basal metabolic reading is not compatible with a slow or moderately elevated pulse. He must not forget that it is much safer to operate upon a patient with hyperthyroidism who is gaining weight than the one who is losing weight with the same basal metabolic reading. In other words, operation should only be attempted for the treatment of hyperthyroidism during a recession. He must be conscious of the fact that with the intelligent use of anti-thyroid drugs in the preparation of the patient, surgery is still the most valuable agent at hand, since it cures about 75 per cent of the patients with Grave's disease.

Roentgenotherapy has frequently been suggested in the treatment of hyperthyroidism. While it is admitted that in a large number of cases treated by x-ray, there is a gradual diminution in the basal metabolic rate and a general improvement of the patient, radiotherapeutic methods have several serious drawbacks. The dosage is difficult to determine. The favorable result in the beginning may, due to the cumulative action of the x-rays, eventually prove to be excessive. This treatment has none of the precision of the operative treatment. Further, radiotherapy is contraindicated in those cases of goiter, which sooner or later, come to operation. The inherent difficulties of an operation for exophthalmic goiter are increased to such an extent by preliminary x-ray treatment as to render the operation almost impossible. The adhesions after x-ray treatment are only to be compared in many cases to those produced by previous thyroidectomy in exophthalmic goiter and usually they are more marked. Further, a most important objection to x-ray treatment is the fact that visceral damage continues to advance while the gland is being treated and, in many instances, reaches a dangerous degree before it can be controlled.

In spite of the benefits of surgery in toxic goiter, recurrence of toxicity as well as persistence of symptoms occur in about 5 per cent of cases. The cause of recurrent symptoms following operation for exophthalmic goiter has not been fully explained. Various theories, as well as carefully conducted studies along this line, have been reported, but as yet no satisfactory reasons have been established as to why, in an occasional instance, recurrence of hyperthyroidism takes place at varying intervals following thyroidectomy. It is true that in many cases the cause of recurrence of the goiter can be definitely traced to incomplete removal of the gland, such as in hemithyroidectomy or in instances in which retrotracheal extensions are overlooked. Yet, there remains a certain definite group of patients in whom minimal amounts of gland tissue are preserved and return of symptoms is noted.

Classification of these recurrences, therefore, can readily be made on the basis of whether the previous removal of the gland was adequate or inadequate, and, of course, the proper treatment in the latter type of case is prophylaxis. This consists in a thorough removal of the gland, including the isthmus and also the pyramidal lobe, if present, leaving only a thin layer on the posterior capsule and taking care to locate and resect any retrotracheal extensions. This procedure will prevent most, but not all, recurrences, and it is in this latter type of case that one cannot attribute a return of the goiter to inadequate or incomplete surgery.

In only a few cases a partial return of some of the signs of hyperthyroidism is present and it is in these cases especially that therapeutic measures fail. In a certain group of cases, exophthalmos, frequently hardly noticeable preoperatively, becomes more and more progressive following removal of the gland so that permanent damage seems a likely factor in the production of these changes. The pathologic change responsible for this condition, as determined by Maffziger and Jones, is of mechanical origin, and, as described by them, is the result of pronounced swelling of the extra-ocular muscles to from three to eight times their normal size. They recommend, for these cases of progressive exophthalmos following thyroidectomy, removal of the roofs of the orbit through bilateral frontal bone flaps. X-ray treatment to the pituitary has proved most effective in the treatment of this condition.

Injury to the recurrent laryngeal nerves takes place most frequently in those patients in whom secondary operations are necessary. This is due to the fact that anatomical relations have become distorted through scar formation, resulting in displacement of the nerve into positions which are particularly susceptible to injury. This type of case again lends itself especially well to the performance of preliminary ligation of the inferior arteries and in the author's experience has given particularly gratifying results.

Postoperative hemorrhage which takes place in 1 or 2 per cent of even the most carefully done thyroidectomies, has occurred in our experience once. Good hemastases at time of surgery will prevent this complication.

CONTROL OF TUBERCULOSIS

Vast changes have taken place in our understanding of tuberculosis, the methods of its control and treatment, and the possibility of its ultimate eradication. As far back as 1937, Dr. Wade Frost demonstrated epidemiologically that this possibility could be made a reality even with the public health control methods then available, provided we intensified our efforts sufficiently. The goal is still distant, but new methods and discoveries give us courage to pursue it still more energetically.—Kendall Emerson, M.D., *Connecticut State Medical Journal,* May, 1952.

Laboratory Aids to Medical Practice

Sponsored by
The Minnesota Society of Clinical Pathologists

FATAL ENTEROTOXIC REACTIONS CAUSED BY ANTIBIOTIC THERAPY

DURING the past year published reports have appeared concerning a hitherto unrecognized complication of antibiotic therapy, namely, a severe or even fatal micrococcal (staphylococcal) enterotoxemia that is caused by administration of terramycin or aureomycin. Practically all of these reports have appeared in France. This important sequela of therapy with antibiotics of broad spectrum was brought to the attention of the Minnesota Society of Clinical Pathologists by Dr. P. T. Sloss, a fellow in Pathology of the Mayo Foundation for Medical Education and Research, at a recent meeting of the Society. Because of the timeliness of Dr. Sloss's presentation and because of the widespread use of such antibiotics, together with the potential dangers involved in this little-known reaction, it was deemed advisable to present this information to the medical profession of Minnesota.

Mechanism

This serious complication of either prophylactic or therapeutic use of aureomycin and terramycin is not caused by hypersensitivity to the agents on the part of the patient but is produced by the effect of these antibiotics on normal fecal flora. Most of the fecal bacteria consist of organisms of the *Escherichia coli-aerogenes* group, together with groups represented by Bacteroides, Clostridium and Proteus. In minor numbers are found Pseudomonas, yeasts, enterococci and saprophytic micrococci.

When terramycin or aureomycin is given, a decrease in the total number of bacteria in the intestinal tract occurs during the first few hours; no great qualitative changes are noted, however. After the first few hours, important changes occur. *Escherichia coli* rapidly decreases in number and becomes practically absent by the fourth day after onset of antibiotic therapy. Organisms of the Proteus group, which are usually resistant to ordinary amounts of terramycin or aureomycin, increase in a reciprocal fashion. This increase becomes extremely rapid by the end of the fourth day, after which Proteus is predominant in the stool. Therefore, a period occurs, usually about the fourth day, when the total number of bacteria in the intestinal content is extremely small.

It is now well recognized that the incidence of strains of *Micrococcus pyogenes* (Staphylococcus) that are resistant to antibiotics is increasing; at present more than 30 per cent of all strains of this organism are resistant to terramycin and aureomycin. If a patient who is receiving one of these antibiotic agents happens to have such a resistant type of *Micrococcus pyogenes* in his intestine, the stage is set for possible disaster. At first the organism in question is present only in small numbers because its growth is retarded by means of competition for nutrition from the much greater numbers of other organisms present. However, on the fourth day *Escherichia coli* has almost completely disappeared and the Proteus group of organisms has not greatly increased. Therefore, the micrococci take advantage of this freedom from competition and multiply rapidly. Since about 40 per cent of strains of *Micrococcus pyogenes* produce quantities of potent enterotoxin, a characteristic syndrome may be produced.

Clinical Aspects and Diagnosis

The patient who harbors such an enterotoxic organism begins to vomit; extremely profuse watery diarrhea rapidly ensues followed by hyperthermia, a decrease in blood pressure, anuria and uremia. The term "choleriformic syndrome" has been applied to this condition because of its resemblance to cholera. Once this train of events appears, its consequences are grave unless it is quickly recognized and unless proper treatment is begun immediately.

This syndrome is a true bacteriologic emergency. When diarrhea appears in a patient who is receiving terramycin or aureomycin, the physician should immediately prepare a smear of the stool and stain it by the ordinary Gram's method. If this syndrome is present, the slide will exhibit myriads of gram-positive cocci as practically the only organisms present. If these organisms are found in anything but small numbers it is essential that administration of terramycin or aureomycin be stopped immediately. When cultures are made on blood-agar plates, pathogenic *Micrococcus pyogenes* will predominate and indeed may even appear in pure culture.

It should be stressed, however, that examination of the slide is sufficient to make the diagnosis and under no conditions should the physician await the outcome of cultures before the method of treatment is changed.

Treatment

If administration of terramycin or aureomycin is continued in the face of the syndrome just described, the bacterial conditions will remain the same and the patient will probably die. If administration of these antibiotic agents is discontinued as soon as the syndrome appears, the number of coliform organisms rapidly returns to normal and thus the growth of *Micrococcus pyogenes* is suppressed. About two-thirds of patients treated in this fashion recover quickly; the remainder die within a day or so.

However, the best treatment is to discontinue the administration of terramycin or aureomycin and begin use of erythromycin by mouth. Erythromycin is effective in the intestinal tract; it is suppressive to practically all strains of *Micrococcus pyogenes* and has little preventive effect on *Escherichia coli.*

Summary

A severe and frequently fatal micrococcal (staphylococcal) enterotoxemia may appear after use of terramycin or aureomycin because of emergence and rapid growth of enterotoxic strains of *Micrococcus pyogenes* (Staphylococcus) during that period when the number of other competitive intestinal organisms is at a minimum.

The toxemia is manifested by vomiting, intense diarrhea, shock, anuria and uremia. Prompt recognition of this "choleriformic syndrome" is necessary to save the life of the patient. Diagnosis is established by the finding of many gram-positive cocci in smears of the stool.

Treatment consists of withdrawal of terramycin and aureomycin and administration of erythromycin.

* * *

The material just presented is the first of a series of editorial reports to be given in Minnesota Medicine under the auspices of the Minnesota Society of Clinical Pathologists. Space for inclusion of these short reports has been kindly provided through the courtesy of the Editor of Minnesota Medicine, for which the Society is grateful.

The purpose of these reports is to bring to the attention of Minnesota physicians facts pertaining to the practice of laboratory medicine that may be of value when applied to the everyday problems which are encountered by the physician. Some of these facts will be new; others may be older but will be presented in such a form as to correlate material already known so that recognized facts may be better utilized in the practice of medicine.

All pathologists of Minnesota, like those elsewhere, are ready and willing at all times to render any aid they can to the clinician so that the scientific practice of medicine and ultimately the welfare and health of the patient may be furthered. The Minnesota Society of Clinical Pathologists is anxious to further the concept of mutual consultation between its members and those physicians who are on the firing line of medical practice. The pathologist will, of course, be aided in his attempt to keep abreast of medical progress by such contact. It is hoped that the clinician can also be helped by rubbing off a bit of the surprisingly heterogeneous body of information that clings to the mental periphery of the pathologist.

Clinicians are encouraged to buttonhole the pathologist in the corridors of the hospital or in his laboratory and ply him with questions that have any bearing, no matter how remote, on laboratory medicine. If the answer is not immediately forthcoming, the laboratory physician will make an attempt to discover a source of information. It must be remembered that the pathologist is a full-fledged physician and his specialized knowledge, if actively sought in a consultative way, may provide the answer to many a puzzling clinical enigma.

The Editorial Committee of the Minnesota Society of Clinical Pathologists, consisting of Dr. Arthur H. Wells of Duluth and Drs. Arthur H. Sanford and George G. Stilwell of Rochester, hopes that these reports will be of some interest and aid. Comments from any physician are extremely welcome and suggestions regarding material for future inclusion will be gratefully embraced. Communications may be addressed to any member of this Committee.

George G. Stilwell, *Chairman*
Editorial Committee

Editorial

CARL B. DRAKE, M.D., *Editor;* GEORGE EARL, M.D., HENRY L. ULRICH, M.D., *Associate Editors*

THE MEDICAL SCHOOL AND MEDICAL PRACTICE

THE ADDRESS by Dr. Charles G. Sheppard of Hutchinson entitled "The Medical School in Relation to Medical Practice in the State" which appears on page 23, was given at the staff meeting of the University Hospital on October 31, 1952, and is reprinted in this issue from the *Bulletin of the University Hospitals and Minnesota Medical Foundation* for October 31, 1952.

Dr. Sheppard is a well-known practitioner. He is a Minnesota graduate and at present is Speaker of the House of Delegates of the Minnesota State Medical Association. He has been on the governor's committee for the revision of commitment laws and has served on the tuberculosis committee of the Minnesota State Medical Association. He is also on the Board of Trustees of the Minnesota Medical Foundation and has maintained his interest in the Medical School.

Dr. Sheppard deserves a good deal of credit for bringing to the attention of the staff of the Medical School a number of phases of the education not only of physicians but of nurses and laboratory and x-ray technicians which he believes could be improved. His criticism is constructive and doubtless is shared by other physicians, both in the cities and in the rural districts. His suggestion that a committee for the Medical School be appointed to confer with the Committee on University Relations of our State Association seems a logical way of handling the questions raised. We recommend the reading and thoughtful consideration by our membership of Dr. Sheppard's address.

MINNESOTA'S NEEDS IN THE FIGHT AGAINST TUBERCULOSIS

THE ARTICLE by Dr. Francis F. Callahan which appears in this issue, provides some interesting factual material about the status of the tuberculosis problem in Minnesota.

The many workers in the field of tuberculosis during the past forty years in Minnesota and throughout the country are entitled to a great deal of credit for the remarkable reduction in mortality in the country generally and in Minnesota particularly during that period. The reduction in the number of reported cases of tuberculosis, however, has not been so striking. As Dr. E. R. Long stated in his Bell Lecture which appeared in our December issue, the number of cases among the negro population of Philadelphia has actually increased, according to the recent survey reported. Shifting population and x-ray surveys doubtless account for this.

Likewise, in Minnesota, there are certain areas which still offer a serious problem in tuberculosis control.

While it sounds like the beginning of the end of the fight to hear that several tuberculosis sanatoria in Minnesota have been closed and converted to other uses, there are certain factors, as Dr. Callahan brings out, that account for this apparent decrease in the patient load. In 1927, 200 beds for the tuberculous were added at the Veterans Hospital in Minneapolis, and recently 252 beds were provided at Anoka for the tuberculous inmates of mental hospitals of the state. In 1934, 100 beds were added to the State Sanatorium at Walker to provide for tuberculous Indians.

The migrating agricultural and industrial workers constitute a serious problem from the standpoint of the high incidence of tuberculosis in the group and the difficulty in detecting new cases and properly caring for them. Ramsey County, in contrast to some of the outlying areas, has had an insufficient number of beds in its sanatorium for many years.

One crying need for further facilities is the care of the recalcitrant patient with positive sputum who ignores proper sanitary measures to prevent the spread of the disease—the psychopath, alcoholic, tramp, and the like. What is needed, as Dr. Callahan indicates, is a 50-bed ward, preferably in connection with the Anoka sanatorium where this type of tuberculous patient can be forcibly quarantined.

The battle for the elimination of tuberculosis is progressing well, but it is far from being won.

It still requires all the means at our disposal to assure the continued reduction in the toll taken by this dread disease.

NEW COMMISSION ON ACCREDITATION OF HOSPITALS

FOR thirty-five years, the American College of Surgeons has classified the hospitals of the county according to standards set by the college. This undertaking has been instrumental in raising the quality of service rendered by the hospitals of Canada and the United States. The undertaking was, of course, entirely voluntary and has cost the College over $2,000,000.

It has been felt in various quarters for some time that the responsibility for setting standards and classifying hospitals should, in fairness, be shared by other organizations also vitally interested in hospital care.

At the December 6 meeting, Dr. Evarts A. Graham, chairman of the Board of Regents of the College of Surgeons, turned over the College's responsibility to Dr. Gunnar Gunderson, first chairman of the new joint commission representing the American College of Physicians, the American College of Surgeons, the American Hospital Association, the American Medical Association and the Canadian Hospital Association.

That the activity of the American College of Surgeons was effective in raising the quality of hospital care is shown by the fact that in 1918, the year after the institution of the program, only 12.9 per cent of the 692 hospitals surveyed were approved, while by 1951, 81.5 per cent of the 4,111 hospitals surveyed were approved.

Headquarters for the new Joint Commission on Accreditation of Hospitals will be at 660 North Rush Street, Chicago 11, Illinois. Dr. Edwin L. Crosby, former Director of Johns Hopkins Hospital, Baltimore, is Executive Director of the Commission.

EFFECT OF TV CRIME PROGRAMS ON CHILDREN

IN OUR ISSUE of November, 1951, under the heading "Wrestling No Longer a Sport," editorial mention was made of the deterioration that has taken place in the sport of wrestling. Attention was drawn to the fact that television makes these atrocious exhibitions available to the youth of our country and the obvious bad effect they must produce. We haven't noticed that the wrestling bouts have been discontinued as a result of the editorial.

The reproduction of wrestling matches on television constitute only a fraction of the presentations which have a deleterious effect on the youth of the country. Having acquired a television recently we, like all other owners, are in a position to evaluate the character of the programs presented—at least from five o'clock on. This marvelous invention in the field of communication has wonderful possibilities for the betterment of mankind. Man needs relaxation and amusement, and television can and does furnish both. But what about the effect of crime programs on the behavior and even the health of children?

A very impressive editorial appeared recently in the *Journal of the American Medical Association* under the title, "Influence of TV Crime Programs on Children's Health" (Sept. 6, 1952). Surveys have been made to determine the number of hours out of the twenty-four devoted to TV by children and the number of crime programs presented. Three and four hours a day spent in watching programs is not unusual. "During the week of May 24-30, 1952, six monitors tabulated 852 major crimes in addition to innumerable saloon brawls, sluggings, assaults and other 'minor' acts of violence. Their findings also include 167 murders, numerous robberies, jail breaks, murder conspiracies, false murder charges, attempted lynchings, dynamitings and an attempted rape in a crime Western for children." This was in California but doubtless applies to the rest of the country as well.

This is what we are feeding to our children in spite of the fact that we know how impressionable youth is, how prone to imitate, how emotionally unstable and how much their digestive and other functions are subject to mental reactions.

It is interesting to note that the use of TV in the field of education, which so far has only begun, is to be expanded. Television and, more particularly, colored television, has proven of value in medical education.

The transmission of TV crime programs is education of the wrong sort, and we can expect to pay for our negligence eventually. The television industry would do well to exert a much more stringent censure on the types of presentations voluntarily, before an aroused public opinion results in governmental regulation.

SISTER ELIZABETH KENNY

SISTER KENNY, justly famous for her treatment of poliomyelitis, died in Sydney, Australia, on November 30, 1952, at the age of sixty-six. She had suffered from Parkinson's disease and recently had a stroke involving her right side and speech center.

With only the medical training of a nurse, she hit upon the value of hot packs in the treatment of children attacked by polio in the bush country of Queensland, Australia. The discovery of the value of woolen blankets wrung out in boiling water in alleviating pain in the acute cases and preventing contractions was the outcome of her efforts to do something for these victims of what was to her at that time an undiagnosed disease.

Obtaining little recognition of her contribution in Australia, she came to America and was given the opportunity to demonstrate the value of her methods in the orthopedic department of the University of Minnesota. The medical staff became convinced of the value of her contribution, and the National Foundation of Infantile Paralysis contributed $500,000 in three years to promote study of her methods. Largely due to her inability to co-operate, a break was made in her relations with the Foundation and the Elizabeth Kenny Foundation was formed in Minneapolis with the help of public and private contributions.

Sister Kenny was a controversial personality. Her conception of the nature of poliomyelitis was not accepted by medical men, but that her emphasis on the value of hot packs and muscle re-education rendered a distinct contribution to the treatment of polio is the consensus of the medical profession.

COMMUNICABLE DISEASES

Last fall seven cases of typhoid fever occurred in Minnesota following a picnic at which food infected by a previously unknown typhoid carrier had been eaten. Such occurrences serve as reminders of how slight are the barriers between good health and the ever-threatening agents of communicable disease.

Minnesota Department of Health physicians point out that penicillin and other "miracle drugs" do not constitute a panacea for some of the most serious communicable diseases. Diphtheria, for instance, must still be combated by general immunization of the child population and by administering antitoxin when the disease occurs.

Smallpox is not amenable to any "wonder drug," and vaccination remains the one important defensive weapon against this disease.

ISOTOPE TRACER TECHNIQUE CITED AS VALUABLE MEDICAL ADJUNCT

As a diagnostic medium, the isotope tracer technique, using radioactive isotopes produced by the United States Atomic Energy Commission, has been hailed as one of the most valuable medical adjuncts since Roentgen's discovery of the x-ray.

A high accuracy in the determination of malignant and nonmalignant thyroid conditions was reported in an article in a recent issue of *Radiology,* published by the Radiological Society of North America and devoted to clinical radiology and allied sciences.

A report of experiences with the isotopes at the Harper Hospital, Detroit, was presented by K. E. Corrigan, Ph.D. and H. S. Hayden, Ph.D., both associated with the radiology department of the hospital.

The diseased thyroid gland is usually not a continuous organ; thyroid tissue is frequently found beyond the bounds of the capsule that surrounds the main gland. Local areas of malfunction are probably the most significant diagnostic problems. The Detroit scientists pointed out, "The thyroid is a highly unreliable organ, and in any state of malfunction its location and distribution are seldom those shown in the books on anatomy."

To aid in the diagnosis, radioactive iodine (I 131) was given by mouth on an empty stomach, excepting in cases where the patient was unable to swallow, in which event the isotope was administered intravenously. The radioactive material had a tendency to accumulate in diseased spots, which were then located by a Geiger counter in scanning studies covering the body.

The report said that 1,754 tracer studies were conducted up to the end of last March, with 107 diagnoses of a malignant growth of the thyroid.

"Of these," the scientists added, "eleven were totally unsuspected on clinical or any other grounds and were first reported as malignant by tracer technique."

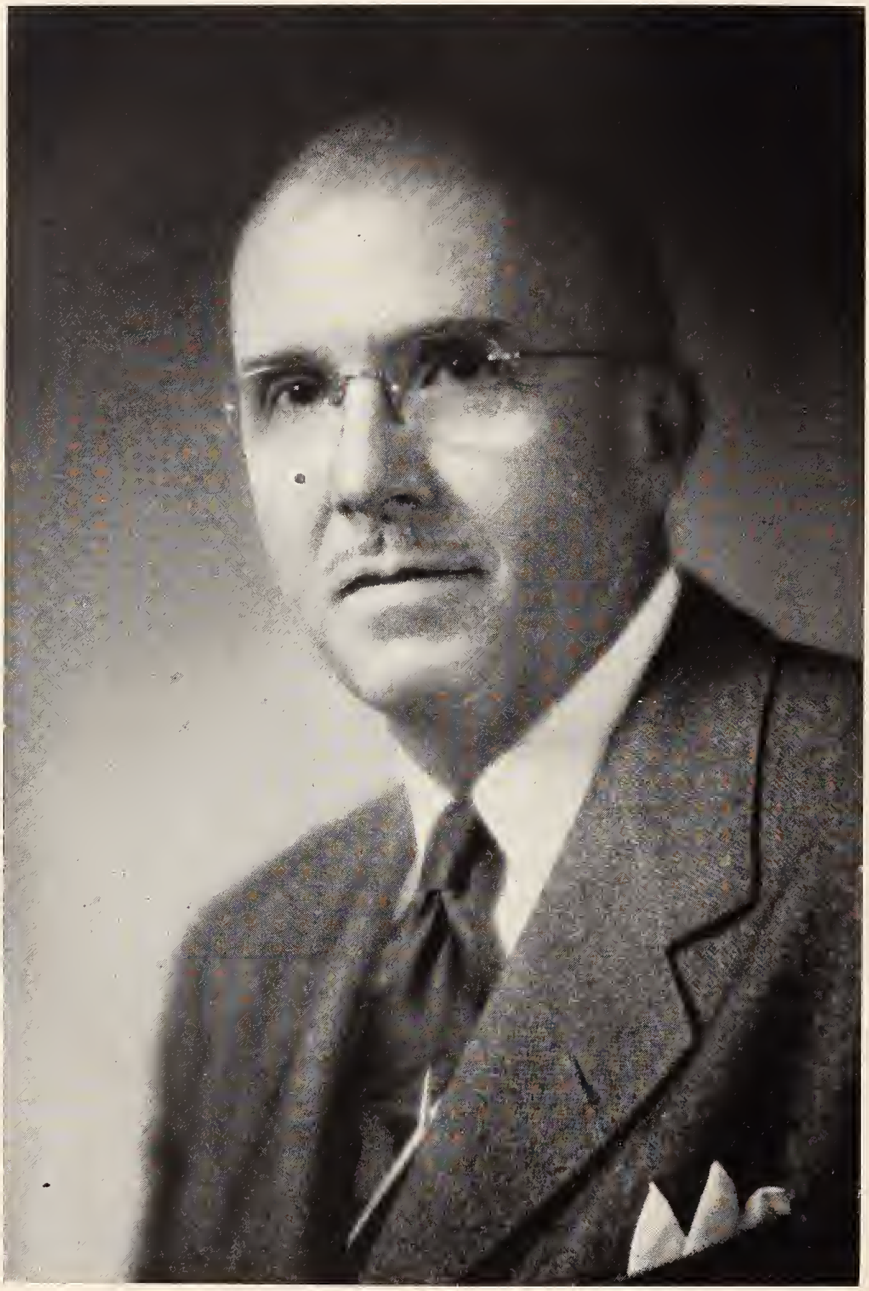
Four cases diagnosed malignant could not be demonstrated by subsequent microscopic examination of the tissue, although one later developed a metastasis (spread of a disease to elsewhere). In one case, a malignant lesion was found which had not been reported.

"In the other 151 operated cases, in which the original problem was to distinguish between malignant and nonmalignant thyroid disease prior to operation and the tracer report was negative for malignancy, no malignancy was found in any case," the report added.

The Detroit scientists also reported the use of a Geiger counter which had been built into a sterile probe. In one case, after the surgical removal of all of the thyroid tissue detectable by visual observation and feeling, the probe counter was inserted into the wound. It showed a strong localization of the radioactive iodine in an out-of-the-way place. A larger incision was made, and at the tip of the probe was found a dark colored ball of tissue.

This tissue on microscopic examination proved to be completely cancerous, the article added. The significance is that without the tracer technique, the second malignancy would not have been found, it was pointed out. "Since these apparently represented all the residual cancer present, the tracer obviously gave the patient some chance of prolonged life which he would not have had otherwise," the report said.

The Detroit scientists emphasized the importance of a thorough technique, adding that any inadequate procedure, especially one where a diagnosis is based on a single observation, can be dangerous and misleading.



Orwood J. Campbell, M.D.
President, Minnesota State Medical Association

President's Letter

A YEAR TO REMEMBER

The honor and privilege of becoming president of an organization is doubly significant and meaningful when that organization is commemorating its 100th anniversary. Such it is for me, as I assume the presidential duties of the Minnesota State Medical Association.

The organized medical profession of the state is, indeed, experiencing a memorable year. This is a year for remembering the marvelous medical advances which have been developed for the benefit of mankind during the past hundred years: the discovery of the "wonder drugs," the great decreases in communicable disease, the reduction of maternal and infant deaths, the great strides in public health, the improvements in treatment of mental illness, the reduction of surgical mortality accompanying the great expansion of the field of surgery, the development of improved methods and equipment, and the constant research into all medical fields so that continued progress will be assured in medicine's fight against one of man's most ruthless enemies, ill health.

The year 1953 is also a year for remembering individual contributions to the field of organized medicine: the fine work of the organization's outstanding workers; the years of service rendered by countless officers, councilors, committee chairmen, committee members; and the devotion of all association members who have faithfully supported the organization through the years.

But, as the centennial year begins, it is not only a time for looking back on past achievements, but a time for looking forward, a time to plan ahead for better service as a medical profession.

I am repeatedly impressed by the sacrifice of time and the real intelligence which busy practitioners have shown toward medicine's problems. I am proud that the Minnesota State Medical Association is comprised of such service-minded physicians who make up its list of officers, councilors, delegates, committees and members. I know that I, as president, can count on their willing co-operation and help in determining and carrying out Association policies.

I pledge myself to use my best thought and effort toward the betterment of the service which medicine can render the public, and toward a betterment of the understanding between the public and the great profession of which we are all a part.

Conrad J Campbell

President, Minnesota State Medical Association

Medical Economics

Edited by the Committee on Medical Economics
of the
Minnesota State Medical Association
George Earl, M.D., Chairman

COSTS AND INFLATION SLOW HILL-BURTON PROGRAM

The latest progress report on the Hill-Burton construction program shows that inflation and budget restrictions are rapidly slowing down the entire program. Since the program began six years ago, construction costs per bed increased, according to hospital authorities, about 50 per cent.

A résumé of the whole program states that approval has been given for 1,877 projects for federal grants totaling just over half a billion dollars. Of the 90,645 beds, about 44 per cent are already in operation, with the remainder under construction or in the planning states.

Appropriations for hospital construction have risen and fallen over the period of Hill-Burton's existence. For fiscal 1948 and 1949, the first full years of operation, appropriations made by Congress were for $75 million annually. Then, in 1950, Congress increased the maximum limit to $150 million, and voted the full amount. The next three years were given appropriations of $85 million, $82.5 million and $75 million, respectively.

Purposes Reviewed

A high percentage of funds has been given to relatively large institutions in urban areas. However, the program was primarily designed to give aid to the building of small hospitals and in rural areas. The Division of Hospital Facilities, Public Health Service, has this to say on the subject: "Although 57 per cent of the new projects are for facilities with fewer than 50 beds, only 25 per cent of the federal funds . . . (go) . . . to these smaller facilities. A little more than half of the federal money for new hospitals assists facilities with 100 or more beds. For additions or alterations, 82 per cent of federal funds is going to hospitals with 100 beds or more."

States Distribute Funds

According to the law under which Hill-Burton operates, funds are allocated to states for distribution. The responsibility of determining what projects get priority in fund allocation, is placed in the hands of the state hospital authority. Decision to leave it up to the states was based on a survey of hospital facilities and the willingness of local communities to make plans and raise money.

Although the emphasis is on larger, long-range jobs, it is noted that reduced grants are not immediately reflected in the administrative workload, which is expected to continue at about its present level for several years. At present, nineteen medical school-connected hospitals are grant-receivers.

REPUBLICAN VICTORY DEALS BLOW AT STATE MEDICINE

The second-guessers have waxed long and loud ever since the overwhelming Republican victory last November. As Eisenhower's new administration begins its arduous task of governing and administering, all eyes will be on Washington and its activities, and the observers will express themselves on activities, with great amounts of hindsight. Because hindsight is a less glamorous term than analysis, it is easy to understand why there is such a dearth of it, for, on the whole, it is a good deal safer and surer than wise foresight.

But a long sober look at the situation is usually highly worth the while for anyone who is vitally interested and affected by what goes on in his government. Doctors of the nation are no less interested and affected than any other conscientious American citizen, and have been so especially in the past few years.

And thus, the American Medical Association, in a post-election Secretary's letter, not to be outdone in second-guessing, sums up the Republican victory: "American voters went to the polls in record numbers last Tuesday and, in no uncertain terms, repudiated the Washington administration and everything it advocated, including compulsory health insurance."

The phrase, "everything it advocated," seems a little strong, when considered in the light of the fact that Eisenhower apparently does not intend nor does he even hint that he wants to clean out *all* New Deal policies and programs. He indicated in his campaign speeches that he was interested in improving most of them and in sharpening and polishing them to top efficiency.

But, the Republican victory certainly does bring with it a definite refutation of the compulsory health scheme which the Truman administration promulgated. The Secretary's letter states: "Doctors will no longer have to dance to the tune of the Ewing pipers, but can devote their full time and energy to a sound, constructive and unselfish program of better medical care for all the people—a program completely divorced from politics."

The letter goes on to quote the *Christian Science Monitor* which felt that "the President (Truman) totally underestimates the opposition to this program." The letter quotes the editorial more fully:

> "President Truman's effort to win support for compulsory health insurance by refraining from calling it compulsory is misleading. Any comprehensive government system of medical care insurance is bound to involve compulsion. It would be like the government's old-age insurance. Both employer and employe would be required to pay a tax, and it would be large. In Europe the taking of treatment prescribed in some cases is also compulsory."

Opposition Widespread

In its description of Truman's disbelief of opposition to the compulsory health insurance plan, the *Christian Science Monitor* continues:

> "He pictures it as consisting only of a medical lobby of a few men in the American Medical Association. On the contrary, the hostility to socialized medicine—which government health insurance implies—has long been dominant in and out of Congress."

Governors Polled

Governors of the forty-eight states were polled at the time of the Wagner-Murray-Dingell bill, and the paper reports:

> "In 1947 Senator H. Alexander Smith, chairman of a Senate committee holding hearings on a national health policy, wrote to the governors of the forty-eight states asking their views on two bills before Congress. One was the Wagner-Murray-Dingell bill providing for a national system of compulsory sickness insurance. Not a single governor recorded himself as favoring such a program. The legislatures of a number of states have memorialized Congress in opposition.
>
> "Many leading organizations have adopted resolutions against the proposition. These include the American Bar Association, the Chamber of Commerce of the United States, the American Farm Bureau Federation, the National Grange, the General Federation of Women's Clubs, the National Federation of Business and Professional Women's Clubs, the American Legion, and scores of others."

Summing up its feeling that this widespread opposition should be enough to make proponents realize its extreme unpopularity, the *Monitor* states: "The widespread antagonism to government-imposed health insurance is a natural reaction against a proposal which would involve great extension of government control, bureaucracy, deterioration in the quality of medical service, and invasion of the rights of the individual."

HEALTH INSURANCE HELD BY HALF OF UNITED STATES

Approximately 86 million Americans—well over half the country's population—has some form of health insurance. Some of it is sold by commercial insurers, but a big portion is administered by private associations linked to organizations of doctors and hospitals.

This information is seen in a recent issue of *U. S. News and World Report.* The survey, based on extensive research by the Federal Reserve Board, makes a general summary of the kinds of insurance held by Americans: "If you have hospital insurance only, you still must dig into your pocket to pay a surgeon for operating. If you have both kinds of this insurance, you will find a big part of your bills for expensive medical treatment is paid in advance."

Unpaid Bills Mount

The survey also showed that unpaid medical bills are owed by nearly one family in five. It states: "The average debt for each of these 10.2 million families is $105, or a total of more than 1 billion dollars. Doctors have a problem in collecting this considerable portion of their income."

In analyzing the composition of these groups of Americans, the survey points out:

> "Young families with children, mainly farmers or workers with small to moderate incomes, are most frequently in debt for medical care. Nearly one third of

those 15.9 million families in which the family head is less than 45 years old and children are under 18 owes medical bills. If you are among this big group of families, you also are among those most heavily in debt for medical care; of the 1.2 million families who owe doctors $200 or more, two thirds are among those with young children."

Whole Cost Not Seen

The study also notes that it cannot report the entire amounts that families spend for medical care:

> "Debts do not reflect all that families spend for medical care. When serious illness strikes, some have savings they spend before going in debt. Some, without savings, borrow from banks or other lenders, especially to meet hospital costs, which usually must be paid in advance. Millions have some form of private health insurance which, in major illness, pays a big part of the bill.
>
> "Of all money spent privately for medical care in the U. S., about $1 out of $9 remains as a debt to a doctor, hospital or pharmacist."

FDIC FURNISHES HEALTH COVERAGE

The Federal Deposit Insurance Corporation became the first government agency to give paid-up health plan coverage to its employes. According to a recent Washington Report on the Medical Sciences, FDIC has nearly 1,100 salaried workers, of whom some 400 are in Washington and the remainder scattered in the field from coast to coast.

The benefits are without cost to the employes. The report says that "they will receive benefits including up to seventy days hospital coverage and liberal in-hospital medical and surgical care, on an indemnity basis."

The plan also allows employes to choose whether they want payroll deductions to cover dependents. Rates are as follows:

> "A worker desiring coverage for a spouse, or a child under age nineteen, will pay $3.59 a month. For family coverage, regardless of size, the rate will be $5.27 monthly. Top surgical fee is $250. Fee allowed for each in-hospital visit by attending physician is $4, with maximum of twenty-three visits allowable in first nineteen days of hospitalization. Freedom of choice of doctor and hospital is guaranteed."

Although the FDIC is a federal agency, it is empowered to grant such a benefit program because it does not receive any funds from the U. S. Treasury. Its operating revenue comes from premiums levied on banks with insured deposits, hence it needs no Congressional law to authorize a program of this kind. There are other government agencies which are not Treasury-supported, and which may possibly wish to follow FDIC's lead. Among these is the Federal Reserve System.

It is also interesting to note that the signing of the FDIC contract with Health Service, Inc., was a precedent, and, according to the Washington Report, "may give impetus to the movement on Capitol Hill for enactment of legislation giving comparable health care coverage to all 2.5 million Federal workers, with Uncle Sam paying 50 per cent or more of the cost."

THE MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

230 Lowry Medical Arts Building
Saint Paul 2, Minnesota

Julian F. DuBois, M.D., Secretary

MINNEAPOLIS PHYSICIAN SENTENCED TO FOUR YEARS IN FEDERAL PRISON

Re United States of America vs. Russell R. Heim

On November 10, 1952, Russell R. Heim, M.D., sixty-six years of age, with offices in the Wesley Temple Building, Minneapolis, and Coroner of Hennepin County, was sentenced to a term of four years in a Federal Penitentiary by the Hon. Gunnar H. Nordbye, Judge of the United States District Court at Minneapolis. Dr. Heim was found guilty by a jury on October 29, 1952, of 229 violations of the Harrison Narcotic Act.

The evidence at Dr. Heim's trial disclosed that Dr. Heim had issued 177 fictitious narcotic prescriptions for patients who did not receive the narcotic drugs. The evidence further showed that Dr. Heim sold the narcotic drugs to patients who were identified at the trial as known addicts, one of whom was employed by Dr. Heim in his office. Dr. Heim testified in his own behalf and admitted the writing of the prescriptions, but claimed that it was only a "technical" violation of the law and was done without any intent on Dr. Heim's part to wilfully violate the Harrison Narcotic Act. The jury refused to believe Dr. Heim and brought in a verdict of guilty on each one of the 229 counts in the indictment.

Dr. Heim was born at Plymouth, Indiana, and received his medical education at the University of Illinois, obtaining an M.D. degree in 1910. He was licensed in Minnesota in June, 1919, by reciprocity. Dr. Heim has been Coroner of Hennepin County since January, 1943. On November 22, 1952, Dr. Heim was served with a citation requiring him to show cause on February 13, 1953, why his license to practice medicine in Minnesota should not be revoked. Dr. Heim is serving his sentence at the Federal Penitentiary at Milan, Michigan.

Minnesota Academy of Medicine

Meeting of May 14, 1952

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, May 14, 1952. Dinner was served at 7 o'clock and the meeting was called to order at 8:10 p.m. by the President, Dr. O. H. Wangensteen.

There were fifty members and eleven guests present.

Minutes of the April meeting were read and approved.

Dr. Wangensteen announced the death of Dr. Charles D. Freeman which occurred since the last meeting and appointed Dr. Hynes and Dr. Hullsiek a committee to prepare a memorial to Dr. Freeman to be presented at the October meeting.

The Secretary announced that the Executive Committee had voted unanimously to transfer Dr. Clarence Dennis' name from the Active to the Honorary list and so recommended to the members present. Upon motion, it was so voted by the members.

Dr. Wallace Ritchie read a memorial to Dr. Alfred Adson and a motion was carried that it be placed on the records of the Academy and a copy sent to the family.

ALFRED W. ADSON

1887 - 1951

On November 12, 1951, one of the outstanding physicians of our time passed away at the age of sixty-four years.

Alfred Washington Adson was born in Terril, Iowa, on May 13, 1887. His father, a Norwegian sailor, had settled in Iowa and farmed in the early days of the nineteenth century. His education at the local high school and at the University of Nebraska gave early evidence of a keen, ambitious, constructive mind. Dr. Adson received his degree of Doctor of Medicine in the University of Pennsylvania in 1914, following which he received an appointment in general surgery at the Mayo Clinic. He rapidly advanced to the position of Professor of Neurosurgery of the Mayo Foundation, Graduate School, University of Minnesota, heading the section of neurosurgery from January 1921 to October 1946, when he became senior neurosurgeon.

Dr. Adson's contributions were outstanding, not only in the field of neurosurgery but also in the fields of organized medicine. In spite of an exacting life as a neurosurgeon, he felt an obligation to medicine in general, as indicated by the many positions he held in both state and national medical organizations.

One of the most important contributions to his medical colleagues and to the public was his unceasing efforts to advance the ideals and standards of medicine as evidenced by his loyal service to the Minnesota State Board of Medical Examiners from 1929 to 1951.

Neurosurgery was still an undeveloped field of surgery when Dr. Adson removed his first brain tumor on December 7, 1916, resulting in a complete cure of the patient.

The next thirty-five years witnessed a tremendous advance in neurosurgery. Dr. Adson's contributions to this advance were innumerable and important. He improved techniques, invented numerous instruments, and was a leader in the development of surgery of the sympathetic nervous system.

A good indication of a man's value to his world is by the number and calibre of the men he has influenced during his career. Three months before Dr. Adson's death, his former fellows honored him with a testimonial dinner. Approximately sixty-five out of a possible seventy-five men were present. The number returning is ample evidence of the respect and devotion that Dr. Adson inspired. Many of those present were already leaders in the specialty of neurosurgery.

Dr. Adson was admitted to membership in the Minnesota Academy of Medicine on April 13, 1938. His thesis was entitled: "Spina Bifida Cystica of the Pelvis; Diagnosis and Surgical Treatment."

His untimely end at the height of a great career was a shock to his many friends. Few men, however, are given the privilege to leave behind such a memory of indefatigable energy, creative instinct, stimulating leadership, and high character as has been left by Dr. Adson.

Wallace P. Ritchie

It was decided that the two papers of the evening, both on the subject of tuberculosis, be given first and then discussions of both papers follow.

PRELIMINARY REPORT ON THE PRESENT STATUS OF TUBERCULOSIS IN MINNESOTA

F. F. CALLAHAN, M.D.

Saint Paul, Minnesota

Dr. Callahan's paper appears on page 33 of this issue.

CHANGING TREATMENT OF TUBERCULOSIS

THOMAS J. KINSELLA, M.D.

Minneapolis, Minnesota

Dr. Kinsella's paper appears on page 29 of this issue.

DISCUSSION

Dr. S. M. White, Minneapolis: Dr. Callahan has emphasized the remarkable diminution in the death rate from tuberculosis in Minnesota. This does not give an over-all view of the situation for there seems to be no comparable diminution in the extant number of cases of the disease nor in the number of new cases reported per annum. I would like to know what is known about the situation with regard to morbidity in tuberculosis. Also, is the practitioner in Minnesota getting any better able to discover the disease early, aside from the mass surveys? And are the patients coming in any earlier than they did ten or twenty years ago?

Dr. Callahan: We do not have tuberculosis morbidity figures on a state-wide basis. We have some morbidity studies that have been carried on in many rural counties particularly in central and southern Minnesota. This work has continued for a number of years and we believe that the findings are reliable. The object of these studies has been to determine the effectiveness of the tuberculosis treatment and control program in the counties patterned after the method of establishing accredited counties worked out a number of years ago for the control and eradication of bovine tuberculosis.

A county, in order to be accredited in the human tuberculosis control program, must have a mortality rate of ten or less per 100,000 population per year and 90 per cent of all high school students in the county must show 10 per cent or less positive tuberculin reactors. In these accredited counties, the morbidity as well as the mortality rate is definitely on the decline. The Health Service at the University of Minnesota has been conducting tuberculosis morbidity studies of the student body for more than twenty years, and there has been a steady decline in the number of tuberculin reactors in this group. It appears that since the introduction of mass x-ray surveys, very few morbidity studies have been made in metropolitan areas.

The general practitioners in the state are not only diagnosing tuberculosis earlier than they did ten or twenty years ago but many of them are giving satisfactory follow-up post-sanatorium care to patients living in counties that do not belong to a sanatorium district.

Dr. Thomas Lowry, Minneapolis: There are many things one would like to talk about. I have enjoyed both of these papers immensely. I know Dr. Callahan will agree with me that in many parts of the country the tuberculosis situation is very, very different. Some of us have contacts at General Hospital where we see the itinerant population. We know even if we did get rid of tuberculosis in this area we would still have a constant influx or "hard core" of these patients from other parts of the country. As long as transportation and general migration of the population is as extensive as it is today, we are always going to have tuberculosis. I think another corollary of that is the question of benefit or lack of benefit of having been exposed to tuberculosis; is the man with a positive tuberculin test better fitted to go into areas with a high tuberculosis rate? The population of Minnesota is gradually becoming tuberculin negative and thus becoming highly susceptible to tuberculosis, and this brings up the question of vaccination with BCG of individuals having greater than average risk of exposure.

I would like to ask Dr. Kinsella how he feels about the treatment of minimal tuberculosis lesions which may regress on sanitarium treatment and arrive at a stable condition which we earlier would have felt was entirely satisfactory. Would he wish to take those out in order to avoid the chance of having them break down later?

Dr. R. H. Frost, Oak Terrace (by invitation): I have enjoyed very much these two fine papers on tuberculosis. Dr. Callahan properly laid stress on the striking decrease in our tuberculosis mortality rates during this century. As an example of this lowered death rate, it is estimated that if the mortality rates of 1900 had continued unchanged during the past fifty years, some 5 million more persons would have died of tuberculosis than actually did die of tuberculosis during this period—certainly a notable achievement. But I think we would be making a mistake if we were to center our attention too exclusively on the lowered mortality rates, and fail to realize that tuberculosis morbidity or attack rates—the actual number of patients requiring treatment for active tuberculosis—are not decreasing in any such degree, and in many metropolitan areas are actually increasing. The reasons for this are not entirely clear. Probably the most important reason is that we are going out and looking for tuberculosis by means of community-wide chest x-ray surveys and generally more effective case-finding programs.

In spite of the great progress that has been made, the fact remains that tuberculosis is still our most important public health problem. It still kills more people than all other communicable diseases combined, and more persons in the fifteen to thirty-four-year age group than any other pathologic entity. In a very real sense, we have only skimmed the cream of our tuberculosis control program—and we must now go to work to find tuberculosis and, having found it, treat it vigorously with the vastly improved techniques now available to us.

The therapy of tuberculosis is in a tremendously dynamic state. The things that have happened in the past few years are really amazing. For the first time we have truly effective antituberculosis drugs. To a very large extent we have abandoned collapse therapy as definitive treatment of pulmonary tuberculosis. Dr. Kinsella mentioned his collected, over-all mortality rates in pulmonary resections for tuberculosis. At Glen Lake Sanatorium in 1951, he (as our chief consultant in thoracic surgery) and one other thoracic surgeon did resections in 133 patients with three deaths. In retrospect, those three were probably not properly selected and would not be resected today. The initial results of these procedures are almost spectacularly good: a respectably low mortality, very few postoperative complications, good preservation of pulmonary function, a very high percentage of conversion of sputum and gastric cultures from positive to negative. Obviously much more time is going to be required in order to prove that these initially good results are going to hold up. I personally feel we are on the right track, and that for the first time in medical history we can treat tuberculosis in a truly definitive way. Certainly we are now restoring to health and good working capacity many tuberculous patients who until these recent years had nothing to look forward to except years of invalidism or death.

We have not started on intrapleural pneumothorax in the past two years. At Glen Lake Sanatorium practically the only type of collapse therapy now in use is a modest amount of pneumoperitoneum—and that primarily as a temporary "holding procedure" in relatively acute disease in the lower half of one or both lungs. Our best results in resectional surgery are obtained in lesions which, after adequate bed rest and chemotherapy, have become stationary and are no longer changing one way or the other. We still do some extrapleural thoracoplasties, but only as "tailoring" or space-filling operations in conjunction with, typically, an upper lobectomy. The incidence of such once-common postoperative complications as bronchopleural fistula and empyema is extremely low. However, it will probably be ten years before we can be sure that this is the proper way to treat pulmonary tuberculosis.

Dr. John F. Noble, Saint Paul: In the past eighteen months I have had the opportunity to study pulmonary tuberculous lesions removed surgically at the Ancker Hospital. Our material to date, however, is relatively small compared with Dr. Kinsella's experience. I agree with Dr. Frost and Dr. Kinsella both in their enthusiasm for this type of therapy, and I also agree that in order to properly evaluate it, a period of at least ten years must elapse.

Certain things about the excised material are interesting from a pathological standpoint. The lesions excised show an almost constant picture. The caseous areas are almost invariably surrounded by a dense fibrous zone. The picture is so constant that I am wondering whether the fibrosis is secondary to the chemotherapy. This, however, will be difficult to prove.

We have also learned that lesions diagnosed by planogram as cavities are frequently only potential cavities and are completely filled with caseous material. As far as I can determine they do not communicate with the bronchial tree at the time they are removed, although this potentiality must always be present. I cannot become too enthusiastic about the removal of minimal pulmonary lesions in children.

Dr. J. R. Aurelius, Saint Paul: I want to thank Dr. Callahan and Dr. Kinsella for presenting this subject. I feel very fortunate in having a ringside seat in this fast-changing picture of tuberculosis therapy. We radiologists seem to have the advantage of seeing it from all angles. Not very long ago we were seeing these patients pretty much put to bed and hoped for a cure through passive therapy but are now seeing the progress that is being made through active chemotherapy combined with surgery. Radiology has made some contribution to this in a way through the use of planograms. We think we see all there is in a chest when we get a good x-ray film of the chest but it is remarkable what additional findings the planogram will bring out. We are in a state of flux at present in the therapy of tuberculosis. It is a great period and it is very interesting to be on the sidelines and watch the passing show.

Dr. Callahan, in closing: In reply to Dr. Lowry's discussion on the itinerant patient, we believe that the tuberculous patient without state or county residence is one of the major roadblocks in the tuberculosis control program in the state and the problem is liable to increase before it gets better. Not only do patients with tuberculosis establish themselves in cities and counties known to have a good tuberculosis sanatorium, but on occasions county welfare board officials and health officers from other states have been known to advise patients to come to Minnesota for treatment. One welfare board actually paid a patient's railroad fare from a city in one of the west coast states to Minneapolis. On his arrival, he reported to the City Health Department and was committed as a public health menace.

In reply to Dr. Robb's question, histoplasmosis can produce isolated lung lesions that cannot be differentiated from active tuberculosis except by bacteriological studies. At a recent meeting of the Minnesota Trudeau Society, Dr. Corrin Hodgson reported three cases of isolated histoplasmosis in which the lesions had been resected. One of these cases had a rather large lung cavity that had the typical appearance of tuberculosis in the x-ray film. However, the usual case of histoplasmosis shows widespread calcified nodules in the lungs often associated with calcification of the hylar lymph nodes.

Wallace P. Ritchie, *Secretary*

ACCIDENTS LEAD AS KILLERS

Accidents cause more deaths in Minnesota in an average year than all communicable diseases, including tuberculosis; more than diabetes, arteriosclerosis, and nephritis combined; more than all adverse conditions of maternity and infancy. Accidents constitute the leading cause of death in all age groups up to thirty-five years.

More than 1,300 Minnesotans were killed in accidents during the first ten months of 1952. One-third of these deaths were caused by accidents in the home. One-third were motor vehicle accidents. One-third occurred in public places other than streets and highways, and in places of occupation.

During the period from January through October, 1952, home accidents outnumbered motor vehicle accidents, 489 to 452. During 1951, the last year for which complete figures are available, home accident deaths totalled 604, or approximately one for each 5,000 of our population.

For every accidental death, the National Safety Council estimates that 150 nonfatal accidents occur. Using the figures of the first ten months of 1952 as a basis, we may expect to finish this year with approximately 550 deaths and 82,500 disabling injuries *from home accidents alone.*

Falls are by far the leading causes of accidental death in homes. More than half the total of home accident deaths last year (358) were caused by falls. Other leading causes, in order of number of deaths caused, were burns, poisons—including gas poisoning—mechanical suffocation, and firearms.

Two main measures are recommended to cut down this appalling total—better housekeeping practices and more care in home situations. The "accident prone" individual is the biggest problem, because he constitutes a factor that is almost impossible to control. "He is impulsive. He is apt to act upon the spur of the moment. He is essentially a rebel. He cannot tolerate even self-discipline." Thus accidents are basically a mental health problem.

Prevention of accidents requires cooperation among home, school, community agencies, and health services. The public health nurse, who visits families in their homes, is in the most favorable position to help them prevent home accidents. She can do much to point out home hazards that might lead to accidents, and to assist in the correction of these conditions. She may also arrange for clinical studies of "accident prone" persons to determine ways of helping them and their families.—*Minnesota's Health,* December, 1952.

WHAT KILLS OUR YOUNG PEOPLE

Here are the leading causes of death, by ages, in Minnesota during 1951, for age groups under thirty-five:

Age in Years	*Total Deaths*	*Three Leading Causes of Death*
1-4	288	Accidents, 98; congenital malformations, 39; cancer, 38.
5-9	166	Accidents, 66; cancer, 25; diseases of central nervous system, 15.
10-14	130	Accidents, 59; cancer, 19; diseases of central nervous system, 9.
15-19	199	Accidents, 105; cancer, 15; diseases of central nervous system, 10.
20-34	722	Accidents, 274; cancer, 101; diseases of the heart, 49.

Virginia (Minn.) Health Bulletin, September, 1952.

DETECTION OF TUBERCULOSIS

Tuberculosis is notorious for the difficulty of detecting it in its early stages. By the time it is discovered, the disease usually has been transmitted to others. In view of this fact, no method of treatment will solve the TB problem in short order, although improved methods should help hasten the far-off day of eradication of tuberculosis. A good vaccine, superior to BCG—the one most widely used at present—would have greater potentialities for rapid control of tuberculosis than any method of treatment. There is no simple solution to the tuberculosis problem. The disease, because of its infectiousness, its present prevalence, its symptomless onset, its long duration, its tendency to recur even though once arrested, is one of the most complex and costly public health problems in the United States.—James E. Perkins, M.D., Annual Report of the NTA, Apr. 1, 1951, to March 31, 1952.

✦ Reports and Announcements ✦

INTERNATIONAL COLLEGE OF SURGEONS

Qualifying examinations for Fellowship in the United States Section of the International College of Surgeons will be held on the following dates in 1953: February 2 and 3, May 4 and 5, August 10 and 11, and November 2 and 3. The examinations will be given at the Cook County Graduate School of Medicine, and the Cook County Hospital. Applicants are requested to address communications to Harry A. Oberhelman, M.D., Secretary, Qualification and Examination Council, 1516 Lake Shore Drive, Chicago 10, Illinois.

WORLD MEDICAL ASSOCIATION AND PAN AMERICAN CONFERENCE

The first western Hemisphere Conference of the World Medical Association, of which Dr. Louis H. Bauer is Secretary General, will be held in conjunction with the Pan American Medical Conference, of which Dr. Jose Angel Bustamante of Havana is president, at Richmond, Virginia, April 23 to 25, 1953. The A. H. Robins, Inc., a pharmaceutical house of Richmond, is providing funds to cover the cost of the meeting. Scientific sessions will consist largely of panel discussions. The meeting will conclude with a dinner, Dr. Bauer presiding.

WORLD CONGRESS ON FERTILITY AND STERILITY

The First World Congress on Fertility and Sterility will be held May 25 to 31, 1953, at the Henry Hudson Hotel in New York City. This Congress is sponsored by the International Fertility Association with the cooperation of the American Society for the Study of Sterility.

Twenty-three scientific sessions will be held, including subjects dealing with socio-economic factors, psychosomatic aspects, and artificial insemination. The meetings will be conducted in English, French and Spanish, with the use of earphones and simultaneous translations, as in the United Nations meetings.

In addition to the scientific sessions, there will be medical round-table discussions, question and answer periods, scientific exhibits, and motion pictures.

It is anticipated that 1800 scientists from fifty-one countries will attend the Congress. Those who plan to attend should write as soon as possible to the Chairman of the Local Arrangements Committee, 1160 Fifth Avenue, New York 29, New York, for advance registration.

AWARD FOR OUTSTANDING RESEARCH IN THE FIELD OF INFERTILITY

The American Society for the Study of Sterility announces the opening of the 1953 contest for the most outstanding contribution to the subject of infertility and sterility. The winner will receive a cash award of one thousand dollars, and the essay will appear on the program of the 1953 meeting of the Society. Essays submitted in this competition must be received not later than March 1, 1953. For full particulars concerning requirements of this competition, address The American Society for the Study of Sterility, c/o Dr. Herbert H. Thomas, 920 South 19th Street, Birmingham, Alabama.

The author should append on a separate sheet of paper a short biographical sketch of himself and include a photograph to be used in the necessary publicity should he be the winner of the award.

MISSISSIPPI VALLEY MEDICAL SOCIETY CONTEST

The Thirteenth Annual Essay Contest of the Mississippi Valley Medical Society will be held in 1953. The Society will offer a cash prize of $100.00, a gold medal, and a certificate of award for the best unpublished essay on any subject of general medical interest (including medical economics and education) and practical value to the general practitioner of medicine. Certificates of merit may also be granted to the physicians whose essays are rated second and third best.

Contestants must be members of the American Medical Association who are residents and citizens of the United States. The winner will be invited to present his contribution before the Eighteenth Annual Meeting of the Mississippi Valley Medical Society to be held in Springfield, Illinois, September 23 to 25, 1953, the Society reserving the exclusive right to first publish the essay in its official publication— the *Mississippi Valley Medical Journal* (incorporating the *Radiologic Review*).

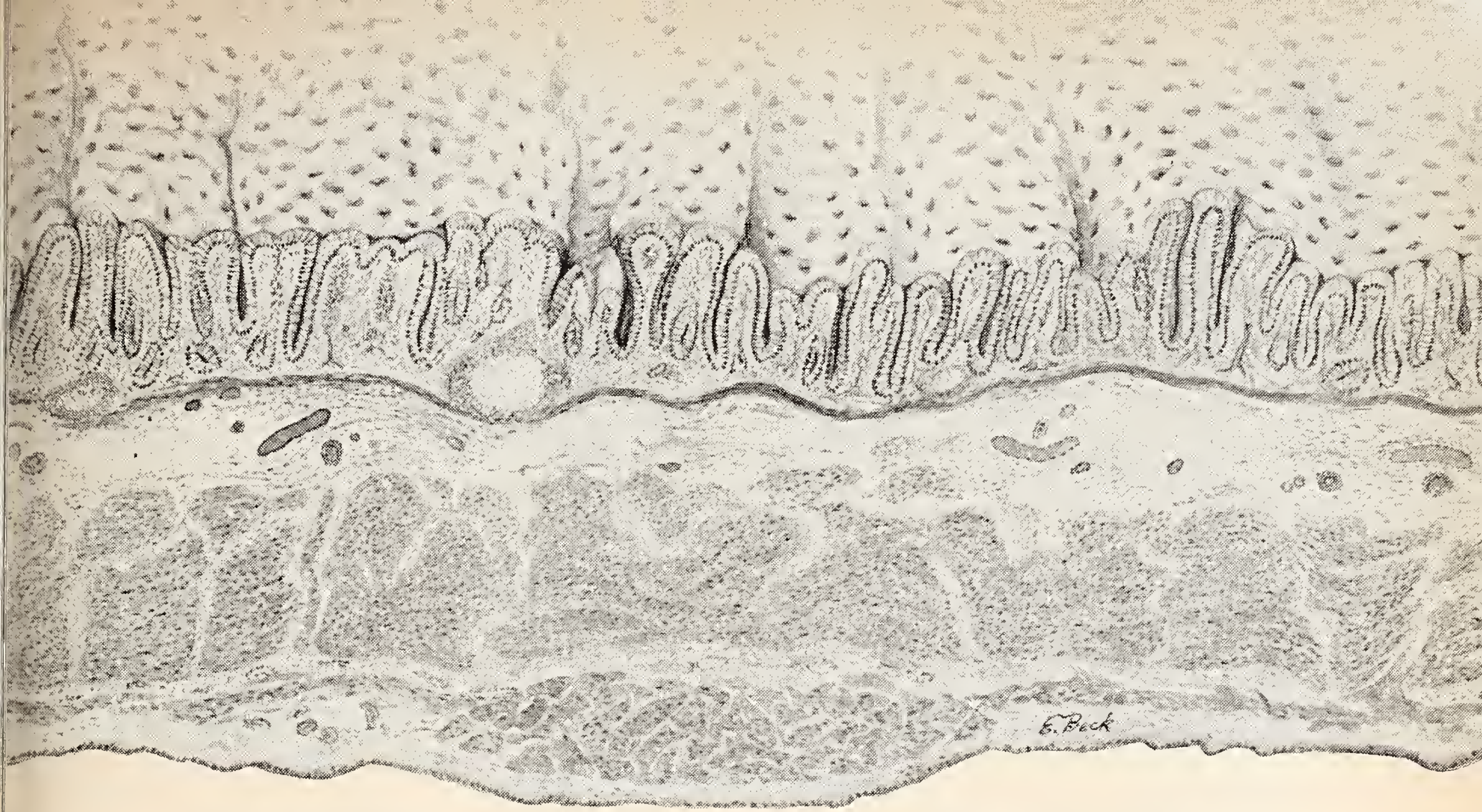
All contributions shall be typewritten in English, in manuscript form, submitted in five copies, not to exceed 5,000 words, and must be received not later than May 1, 1953. The winning essays in the 1952 contest appear in the January 1953 issue of the *Mississippi Valley Medical Journal.*

Further details may be secured from: Harold Swanberg, M.D., Secretary, Mississippi Valley Medical Society, 209-224 W.C.U. Building, Quincy, Illinois.

CONTINUATION COURSES

The University of Minnesota, in conjunction with the Minnesota Heart Association, will present a continuation course in *Cardiovascular Diseases* at the Center for continuation Study on February 12 to 14, 1953. Intended primarily for physicians engaged in general practice, the course will emphasize treatment of the more common cardiovascular disorders. Peripheral vascular disease will be thoroughly discussed. The program will also feature a clinical correlation session.

The guest faculty will include the eminent cardiologist, Dr. Arthur M. Master, Associate Professor of Clinical Medicine, Columbia University College of Physicians and Surgeons, New York City. Clinical and full-time members of the staff of the University of Minnesota



Normal peristaltic action results from activity of the muscle layers as they are gently distended by bulk within the intestine; mucosal irritants cause overactivity of the muscle layers resulting in hyperperistalsis or spasm.

Corrective Action of Metamucil® in Abnormal Physiology of Constipation

Abnormally prolonged colonic retention, whether in a spastic or an atonic colon, demands the greatest care to assure correction.

The mucosa does not require stimulating; hence, stimulating cathartics, "roughage" and other physical and chemical irritating measures, are today often considered irrational.

On the other hand, the muscularis does require a stimulus to initiate peristalsis. This physiologic stimulus is the mechanism by which bland distention of the colon establishes a reflex, with the muscularis at the terminus of the reflex arc.

Metamucil literally reeducates the sluggish and also the spastic colon. Taken with adequate amounts of water, Metamucil forms a smooth, hydrophilic colloid. As this colloidal mass passes through the large intestine, it exerts a gentle, distending pressure within the lumen, thus initiating the peristaltic reflex necessary for evacuation.

A program of Metamucil therapy helps to restore proper tone to the intestinal musculature, thereby establishing proper bowel habits.

Metamucil® is the highly refined mucilloid of Plantago ovata (50%), a seed of the psyllium group, combined with dextrose (50%) as a dispersing agent. It is accepted by the Council on Pharmacy and Chemistry of the American Medical Association.

G. D. SEARLE & CO.
Research in the Service of Medicine

ANNOUNCING

The Sixteenth Annual Meeting
of
THE NEW ORLEANS GRADUATE MEDICAL ASSEMBLY

Conference Headquarters – Municipal Auditorium
MARCH 2-5, 1953

GUEST SPEAKERS

J. Lamar Callaway, M.D., Durham, N. C.
Dermatology
A. H. Aaron, M.D., Buffalo, N. Y.
Gastroenterology
Herbert E. Schmitz, M.D., Chicago, Ill.
Gynecology
Carl V. Moore, M.D., St. Louis, Mo.
Hematology
Rudolph H. Kampmeier, M.D., Nashville, Tenn.
Internal Medicine
Henry A. Schroeder, M.D., St. Louis, Mo.
Internal Medicine
Guy L. Odom, M.D., Durham, N. C.
Neurosurgery
Andrew A. Marchetti, M.D., Washington, D. C.
Obstetrics
Harold F. Falls, M.D., Ann Arbor, Mich.
Ophthalmology
J. Vernon Luck, M.D., Los Angeles, Calif.
Orthopedic Surgery
G. Edward Tremble, M.D., Montreal, Can.
Otolaryngology
Arthur P. Stout, M.D., New York, N. Y.
Pathology
Waldo E. Nelson, M.D., Philadelphia, Pa.
Pediatrics
Edward B. D. Neuhauser, M.D., Boston, Mass.
Radiology
George Crile, Jr., M.D., Cleveland, Ohio
Surgery
Robert E. Gross, M.D., Boston, Mass.
Surgery
Charles W. Mayo, M.D., Rochester, Minn.
Surgery
Wyland F. Leadbetter, M.D., Boston, Mass.
Urology

Lectures, symposia, clinicopathologic conferences, round-table luncheons, surgical and medical procedures in color television, medical motion pictures and technical exhibits.
(All-inclusive registration fee—$20.00)

THE POSTCLINICAL TOUR TO EUROPE BY SHIP AND PLANE—ENGLAND, FRANCE, SWITZERLAND AND ITALY—MARCH 7-31

For information concerning the Assembly meeting and the tour write
Secretary, Room 103, 1430 Tulane Avenue, New Orleans 12, La.

Medical School and the Mayo Foundation will complete the faculty.

* * *

Under the auspices of the University of Minnesota and the Minnesota Cancer Society, a continuation course in *Cancer Detection for General Physicians* will be presented next February 5 to 7, 1953, at the Center for Continuation Study and the University Hospitals Cancer Detection Center. With the thought in mind that "each doctor's office can be a cancer detection center," registrants for the course will spend the major share of their time in the University's Cancer Detection Center, where they will participate directly in the diagnostic activities. Registration will be strictly limited in order that each registrant may obtain maximum benefit.

* * *

The University of Minnesota will present a continuation course in *Recent Advances in Diagnosis for Internists* at the Center for Continuation Study on February 16 to 18, 1953. Although intended primarily for specialists in internal medicine, the program will be of interest to many pediatricians and general physicians. This course will provide information concerning techniques which have been introduced or developed within the past five to ten years which have increased our knowledge of basic physiology and which are becoming or give promise of becoming standard diagnostic procedures. Recent developments in the fields of cardiology, respiratory disease, renal disease, hematology, gastro-enterology, and endocrinology will be emphasized.

Under the direction of Dr. C. J. Watson, Professor and Director of the Department of Medicine, an outstanding guest faculty has been assembled: Dr. Carl V. Moore, Professor, Department of Medicine, Washington University School of Medicine, St. Louis, Missouri; Dr. Thomas E. Machella, Assistant Professor, Department of Medicine, and Associate in Physiology, University of Pennsylvania School of Medicine, and Chief of Gastro-Intestinal Clinic, Hospital of the University of Pennsylvania, Philadelphia; Dr. Robert P. Grant, U. S. Public Health Service Hospital, Baltimore; and Dr. William W. Engstrom, Associate Professor, Department of Medicine, Marquette University School of Medicine, and Director, Metabolism Section, Milwaukee County Hospital. The remainder of the faculty will include clinical and full-time members of the staff of the University of Minnesota Medical School and the Mayo Foundation.

* * *

The University of Minnesota announces a continuation course in *Clinical Dietetics* which will be held at the Center for Continuation Study on March 2 to 4, 1953. During the two-and-a-half day session, recent advances in the field of clinical dietetics will be considered. In addition, a part of the course will deal with some problems in administrative dietetics. The program will be under the direction of Miss Gertrude I. Thomas, Director of Nutrition and Professor of Dietetics.

Upjohn

less-antigenic penicillin:

Cer-O-Cillin

Trademark Reg. U. S. Pat. Off.

POTASSIUM

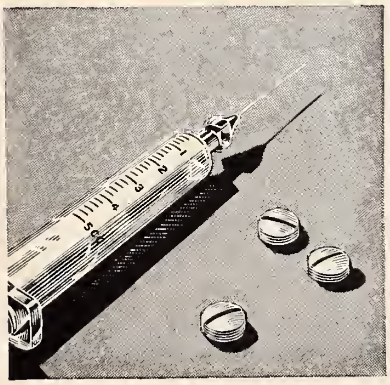
ACCEPTED
COUNCIL ON PHARMACY AND CHEMISTRY
AMERICAN MEDICAL ASSOCIATION

Available as:

Sterile vials containing 200,000 units Crystalline Penicillin O Potassium

Bottles of 12 buffered tablets, each containing 100,000 units Crystalline Penicillin O Potassium

The Upjohn Company, Kalamazoo, Michigan



COMPLETE
OPHTHALMIC
SERVICE
FOR THE
PROFESSION

Benson
OPTICAL COMPANY

Laboratories in
Minneapolis and
Principal Cities of
Upper Midwest

Since 1913

COMPLETE
Laboratory Service
IN
Deep X-Ray Therapy
Roentgen Diagnosis
Radium Treatment
Radium Rentals
Clinical Biochemistry
Clinical Pathology
Tissue Examination
Clinical Bacteriology
Interpretation of YOUR E.K.G. records
Toxicological Examinations

MURPHY LABORATORIES
—Est. 1919
Minneapolis: 612 Wesley Temple Bldg., At. 4786
St. Paul: 348 Hamm Bldg., Ce. 7125
If no answer call: 222 Exeter Pl., Ne. 1291

OPHTHALMOLOGY AND OTOLARYNGOLOGY CONVENTION

The annual spring convention in Ophthalmology and Otolaryngology will be held in Portland, Oregon, March 23 to 27, 1953. The program has been arranged by the Oregon Academy and the University of Oregon Medical School.

The meeting will be divided into two sections. Ophthalmology will be held Monday, Tuesday and Wednesday mornings (March 23, 24, 25) and Otolaryngology will be held Wednesday, Thursday and Friday afternoons (March 25, 26, 27).

Guest speakers will be Dr. Herman Burian, Associate Professor of Ophthalmology, State University of Iowa Medical School, Iowa City; Dr. Harold Scheie, Associate Professor of Ophthalmology, University of Pennsylvania Medical School, Philadelphia; Dr. Kenneth M. Day, Professor of Otology, University of Pittsburgh Medical School, Pittsburgh; Dr. Jerome A. Hilger, Clinical Assistant Professor of Otolaryngology, University of Minnesota Medical School, Minneapolis. Dr. Burian will deliver the fourth John E. Weeks Memorial Lecture in Ophthalmology.

A table will be available for the display of new instruments. Those wishing to display instruments are requested to notify David D. DeWeese, M.D., Secretary, 1216 S. W. Yamhill Street, Portland 5, Oregon.

INDUSTRIAL HEALTH CONFERENCE

New developments in methods for protecting and improving the health of the American worker and of insuring his safety will be reported by the nation's leading industrial doctors, dentists, nurses and hygienists at the 1953 National Industrial Health Conference to be held in Los Angeles, April 19-24, 1953.

Professional groups participating in the conference will be the American Conference of Government Industrial Hygienists, United States Navy Industrial Health Organization, American Association of Industrial Dentists, American Industrial Hygiene Association, Industrial Medical Association, and the American Association of Industrial Nurses.

This is the first time the six groups have ever scheduled their sessions together on the West Coast. Phenomenal increase in industrial activity in this area, particularly in Southern California, has finally attracted this important national conclave.

George F. Wilkins, M.D., medical director of New England Telephone and Telegraph Company and president-elect of the Industrial Medical Association, says that since employes in all industries and their families constitute the largest segment of the American population, the work of the conference actually concerns the health and economic well-being of the people of the United States as a whole. He believes that industry has no manpower to spare and a key theme that will recur repeatedly throughout this year's meeting will be keeping the industrial worker healthy and on the job.

WHERE ALCOHOLICS ACHIEVE INSPIRATION FOR RECOVERY

Where gracious living, a homelike atmosphere and understanding companionship contribute to successful rehabilitation.

200 acres on the shores of beautiful Lake Chisago

The methods of treatment used at the Hazelden Foundation are based on a true understanding of the problem of alcoholism. Among the founders of the nonprofit Hazelden Foundation are men who have recovered from alcoholism through the proved program of Alcoholics Anonymous and who know the problems of the alcoholic. All inquiries will be kept confidential.

HAZELDEN FOUNDATION

Lake Chisago, Center City, Minn. Telephone 83

ANNUAL CLINICAL CONFERENCE

CHICAGO MEDICAL SOCIETY

March 3, 4, 5, 6, 1953 • Palmer House, Chicago

THIRTY-FOUR HALF-HOUR LECTURES BY OUTSTANDING TEACHERS AND SPEAKERS on subjects of interest to both general practitioner and specialist.

FOUR PANELS ON TIMELY TOPICS.

DAILY TEACHING DEMONSTRATIONS.

- Neurology Clinic
- Dermatology Clinic
- Fracture Clinics
- Radiology
- Obstetric and Gynecology Clinic
- Cancer Clinic
- Fluid and Electrolyte Balance
- Rehabilitation Clinic

SCIENTIFIC EXHIBITS worthy of real study and helpful and time-saving TECHNICAL EXHIBITS.

The CHICAGO MEDICAL SOCIETY ANNUAL CLINICAL CONFERENCE should be a MUST on the calendar of every physician. Plan now to attend and make your reservation at the Palmer House.

Of General Interest

Dr. John Briggs, Saint Paul, was made an honorary member of the Sociedad Chilema de Tisiologia following his presentation of a paper before the society in Santiago, Chile, last summer.

* * *

The **Air Force Nurse Corps** needs 1,000 registered nurses to fill critical vacancies in Air Force Hospitals. Nurses, if accepted, will train at The School of Aviation Medicine at Gunter Air Force Base, Alabama, and will be given an opportunity to specialize in Pediatrics, Operating Room Techniques, Obstetrics, Neuropsychiatrics, and Anesthesia, or may fill the position of a staff nurse, head nurse, preventive medicine nurse, flight nurse or communicable disease nurse.

Second Lieutenants receive over $300 a month, educational opportunities and veterans benefits. Further information may be obtained by writing to the Chief Nurse Headquarters, First Air Force, Mitchel Air Force Base, New York.

* * *

Air Force Surgeon General **Harry G. Armstrong,** president of the Association of Military Surgeons, was host to the Surgeon General of the Korean Army and fifty military physicians from twenty nations at the annual association meeting in Washington, November 17 to 19.

Dr. Armstrong, a graduate of the University of South Dakota, interned at St. Luke's Hospital in Saint Paul and practiced in Minneapolis before he joined the air force.

* * *

Dr. A. C. Hilding, Duluth, spoke to the St. Louis County Medical Society on "Wanderings—Medical and Otherwise," at the meeting November 13, held at St. Luke's Hospital in Duluth.

* * *

Dr. Mario Fischer, St. Louis County health officer, was named a member of the community committee to investigate available facilities for housing and caring for mentally ill patients prior to the time their hearings are held in probate court.

* * *

Dr. R. M. Watson, who recently became associated with his father-in-law, **Dr. A. I. Arneson,** in the clinic at Morris, opened an office in Herman in November and plans to hold regular office hours there every morning.

* * *

Symbolizing another milestone in Minnesota's progress in the care of mentally ill patients with tuberculosis, the Burns Memorial building at Anoka was dedicated November 21, with **Dr. J. A. Myers** of the University of Minnesota as master of ceremonies.

The building was erected in tribute to **Dr. H. A. Burns,** who was tuberculosis control officer for state institutions seven years until his death in 1949.

Dr. Ralph Mahowald, Grand Forks, addressed the members of the Sacred Heart Men's Club on cancer, November 18.

* * *

Dr. Norman H. Baker, Fergus Falls, was elected president of the Red River Valley Council of the Boy Scouts of America at the annual Council meeting at Fargo, November 16. Dr. Baker has been active in Scout work for more than nine years and is chairman of the Wilderness Camps land development committee of the Council. **Dr. Charles Nelson,** of Fergus Falls, was elected an honorary vice president.

* * *

Dr. Al Emond, of Farmington, attended the fractures and surgery course at the Center for Continuation Study at the University of Minnesota, November 13 to 15.

* * *

Dr. Claude R. Hitchock, director of the Cancer Detection Center at the University of Minnesota, spoke on cancer research in South Saint Paul to a meeting of community members representing social, church and fraternal groups working with the cancer control program of the American Cancer society.

* * *

On the guest faculty of the second annual Regional Postgraduate Courses for Nebraska physicians, November 17 to 22, was **Dr. Corrin H. Hodgson,** of the Mayo Clinic.

* * *

Dr. D. S. Fleming of the division of tuberculosis, State Department of Health, spoke at the Steele County chest x-ray survey meeting held in Owatonna, November 12.

* * *

Dr. Theodore G. Martens, Rochester, consultant in ophthalmology at the Mayo Clinic, was the principal speaker at the annual dinner meeting of the Minnesota Society for Prevention of Blindness, held at Coffman Memorial Union at the University of Minnesota, November 14.

* * *

Dr. Clyde A. Undine, Minneapolis, attended the regional meeting of the American College of Physicians at Chicago, November 24.

* * *

Dr. Hamline Mattson of Minneapolis addressed the Rice County Medical Society, November 18, at Northfield on "Recurrence Factors in the Surgery of Inguinal Hernia."

* * *

Dr. Moses Barron, Minneapolis, was chairman of the city-wide diabetes detection drive which opened November 17, for a week. The drive was sponsored by the Twin Cities Diabetes Association, the Henne-

Who Finances a School Building

The School District first sells its bonds to a Municipal Bond dealer, like ourselves.

The Dealer then retails the bonds individually, in $1,000 denominations, to investors, such as yourself.

As the bonds mature, they are paid by the School District from the proceeds of a tax, levied over the life of the bonds, upon all of the taxable property in the School District. These taxes are a lien on the property prior to any other lien, including that of a first mortgage.

The interest the investor receives on his bonds is exempt from present Federal Income Taxes. We have a chart to show the advantage to you of this exemption.

We have such School Building Bonds for sale, at attractive interest rates, and invite your inquiry.

JURAN & MOODY
MUNICIPAL SECURITIES EXCLUSIVELY

TELEPHONES:
GArfield 9661
PRior 6423

93 EAST SIXTH ST.
ST. PAUL 1, MINNESOTA

pin County Medical Society, the Minneapolis Health Department and the Twin Cities Retail Druggists Association.

* * *

Dr. G. L. Griebie joined **Dr. A. M. Jensen** at the Brownton Clinic at Brownton, November 10. Dr. Griebie recently completed twenty-one months of military duty. Before being ordered to military duty he was associated with **Dr. J. D. Selmo** at Norwood.

* * *

Dr. Stanley R. Maxeiner, Jr., completed his surgical fellowship at Rochester, July 1, and received his Master of Science degree in Surgery. He is now serving with the First Marine Division in Korea.

Dr. Stanley R. Maxeiner, Sr., attended the Western Surgical Association meeting in December, at Houston, Texas, where he presented a paper on "Surgery of Regional Enteritis."

* * *

Speakers at the Minnesota Heart Association Fund Campaign meeting, November 22, were **Dr. Lewis Thomas**, research professor at the Variety Club Heart Hospital; **Dr. Grace M. Roth**, president of the Minnesota Heart Association, and **Dr. Harold S. Diehl**, dean of medical sciences at the University of Minnesota.

The Fund Drive for 1953, to begin in February, is annually sponsored by the Minnesota State Association of Life Underwriters.

Entrance Foyer

Saint Paul's Exclusive

CRESTVIEW
NEUROPSYCHIATRIC
HOSPITAL

New . . Modern . . Complete . .

Providing the highest standard of service at the lowest cost.

- **Occupational therapy and recreational department.**
- **Complete X-ray and laboratory.**
- **Electrocardiography—basal metabolism.**
- **Electroencephalography available.**
- **All patients rooms air-conditioned.**
- **Background music and psychotherapy sound equipment.**
- **Medically staffed by every neurologist and psychiatrist in Saint Paul.**
- **Especially trained nursing staff.**

MEMBER of the American Hospital Association
MEMBER of the Minnesota Hospital Association
APPROVED by the Minnesota State Medical Association
and the Ramsey County Medical Society.

CRESTVIEW HOSPITAL • 145 W. College Ave., St. Paul
GArfield 5841
A non-profit organization

Dr. John Briggs, chief of medicine at Ancker Hospital in Saint Paul and a regent in the American College of Chest Physicians, **Dr. Ezra V. Bridge**, superintendent of Mineral Springs, and **Dr. J. Arthur Meyers**, were member of a panel discussing Minnesota's tuberculosis problem and its treatment over WCCO-TV, November 16.

* * *

Dr. Arlie R. Barnes, Mayo Clinic heart specialist, resigned as chairman of the Clinic's Board of Governors in November because of illness. **Dr. Hugh R. Butt**, head of a section in medicine, was appointed to the unexpired term of Dr. Barnes. **Dr. Samuel F. Haines** was re-elected vice chairman of the Board and **Drs. Mandred W. Comfort** and **James T. Priestly** were reappointed to six-year terms.

* * *

After two years in the Navy Medical Corps, **Dr. Wallace R. Anderson** returned to his practice with the Austin Clinic. Dr. Anderson received his medical degree from the University of Minnesota in 1946 and did graduate work in pediatrics at the University of Minnesota before he joined the Austin Clinic in 1950.

* * *

Dr. Robert Meyer, Faribault, gave an illustrated talk on cancer to the members of the Faribault Exchange Club at their regular weekly noon-luncheon meeting, November 18.

* * *

Members of the Roseau Lions Club were guests of **Dr. D. O. Berge** and **Dr. G. S. Wheeler** at the reception room of their new clinic, November 13.

* * *

Dr. Reinald G. Johnson, St. Louis Park, was named Hennepin County coroner, November 24. Dr. Johnson has been in private practice for eight years. During World War II, he served in the Philippines with the Army Medical Corps.

* * *

Dr. F. N. Grose, Clarissa, and Mrs. Evelyn Hemming, Long Prairie, county nurse, were guest speakers following a half-day health exhibit in the Clarissa and rural schools. The Health Exhibit, including films, was sponsored by the State Department of Health and the Clarissa Parent Teachers Association.

* * *

Dr. B. J. Cronwell, Austin, Mower County chairman of the 1953 Heart Fund, attended the meeting on ways and means of financing the Heart Association Drive, held at the University of Minnesota, November 22.

* * *

Dr. Ralph K. Ghormley was elected the new president of the Mayo Clinic staff at a staff meeting, November 17. **Dr. Thomas J. Dry** was elected vice president and **Dr. Mark B. Coventry** was re-elected secretary. Councelors to the staff named were **Drs. L. P. Howett** and **D. M. Masson.**

* * *

Dr. Roger L. Kennedy, president, and **Dr. O. J.**

Campbell, president-elect, Minnesota State Medical Association, were named to the state committee for the Children's Home Society of Minnesota, November 24.

* * *

Mrs. John Hamlon, wife of **Dr. John S. Hamlon**, State Hospital, Fergus Falls, was a participant in the Pillsbury national baking contest at the Waldorf-Astoria in New York, December 8. She was one of three women in Minnesota eligible for the contest and won a prize of $1,000 for her cookie recipes.

* * *

A film on Norway, made on his recent trip there, was shown by **Dr. S. W. Giere**, Benson, November 30, at a meeting of the West Zion Luther League.

* * *

Dr. Norman A. Sterrie, Worthington, stressed the importance of immunization in the public schools over Station KWOA, November 23.

* * *

Dr. W. H. Sutherland sold his medical practice in Benson, November 22, to **Dr. Donald Holm** of Willmar. Dr. Sutherland is leaving his practice January 1, 1953 to take a six-month course in anesthesiology at the Veterans Hospital at Fort Snelling. Dr. Holm is a graduate of the University of Minnesota School of Medicine and has practiced in Willmar for the past two years.

* * *

Dr. E. E. Hartman, maternal-child health physician, Minneapolis Health Department, was granted a leave of absence January 18, to visit her father in Finland.

* * *

Dr. Dwaine Paal, of Currie, left November 20, for Baltimore, Maryland, to do postgraduate work at Johns Hopkins Hospital.

* * *

Concerning themselves with our increasing aged population, **Dr. Robert N. Barr**, deputy executive officer, Minnesota Department of Health, and **Dr. Helen Knutson,** director hospital service in the state, Minnesota Department of Health, spoke to a joint meeting of the County Public Health Nursing Advisory Board and Registered Nurses Club, held November 24 at New Ulm.

* * *

Dr. Robert W. Keyes, Pipestone, plans to practice in his home town as soon as he is released from service with the Army Medical Corps in February. Dr. Keyes was graduated from the University of Minnesota Medical School, interned at Chicago and was in practice at Hastings and Ely before entering the service.

* * *

Dr. Claude J. Ehrenberg, president of the Hennepin County Medical Society, was a member of the panel discussing the need of a new General Hospital at a Minneapolis Town Meeting, November 22.

* * *

One of twenty-three physicians selected to assist the committee on scientific exhibits for the American

Convalescence calls for High Protein and Knox Gelatine

Convalescence is associated with protein loss of serious magnitude, yet little is known of the fundamental nature of the loss.[1] Loss of nitrogen cannot be prevented; however, nitrogen balance can be maintained, wound healing enhanced, and convalescence shortened, by a high protein diet.[2]

Otherwise the patient uses his own "available" nitrogen stores to accomplish the healing defect.[3]

The patient "is better off before his nitrogen stores have been wasted than after. Surgeons have long noted that chronically debilitated patients are poor operative risks."[1] Decubitus ulcers heal quickly in heavily protein-fed patients.[4]

These facts are clear, as is also the fact that Knox Gelatine, which is pure protein, offers a useful method of supplementing the ordinary dietary protein.

Knox Gelatine is easy to digest, while its supplementary dietary nitrogen will furnish protein without other substances, especially salts of potassium which are retained during convalescence; without excess fat and carbohydrate, which are not needed especially; and without a food volume which may interfere with intake.

1. Howard, J. E. Protein Metabolism During Convalescence After Trauma. Arch. Surg. 50:166, 1945.
2. Co Tui, Minutes of the Conference on Metabolism Aspects of Convalescence Including Bone and Wound Healing. Josiah Macy, Jr. Foundation, Fifth Meeting Oct. 8-9, p. 57, 1943.
3. Whipple, G. H. and Madden, S. C. Hemoglobin, Plasma Protein and Cell Protein: Their Interchange and Construction in Emergencies. Medicine 23:215, 1944.
4. Mulholland, J. H., Co Tui, Wright, A. M., Vinci, V., and Shafiroff, B. Protein Metabolism and Bed Sores. Am. Surg. 118:1015, 1943.

KNOX
KNOX
UNFLAVORED
GELATINE

AVAILABLE AT GROCERY STORES IN 4-ENVELOPE FAMILY SIZE AND 32-ENVELOPE ECONOMY SIZE PACKAGES

Write today for your free copy
"Feeding the Sick and Convalescent."
Knox Gelatine, Johnstown, N. Y., Dept. MM

KNOX GELATINE U.S.P. ALL PROTEIN NO SUGAR

THE
MEDICAL PROTECTIVE
COMPANY
FORT WAYNE, INDIANA

PROFESSIONAL PROTECTION
EXCLUSIVELY
SINCE 1899

specialized service
assures *"know-how"*

MINNEAPOLIS Office:
Robert L. McFerran, Rep.,
2422 Clinton Ave. So., Apt. E-14,
Telephone Fillmore 1292

Cook County Graduate School of Medicine

POSTGRADUATE COURSES—Winter 1952-53

SURGERY—Intensive Course in Surgical Technic, two weeks, starting January 19, February 2, February 16
  Surgical Technic, Surgical Anatomy and Clinical Surgery, four weeks, starting March 2
  Surgical Anatomy and Clinical Surgery, two weeks, starting March 16
  Basic Principles in General Surgery, two weeks, starting March 30
  Gallbladder Surgery, ten hours, starting April 20
  Surgery of Colon and Rectum, one week, starting March 2
  General Surgery, one week, starting February 9
  General Surgery, two weeks, starting April 20
  Fractures and Traumatic Surgery, two weeks, starting March 2
GYNECOLOGY—Intensive Course, two weeks, starting February 16
  Vaginal Approach to Pelvic Surgery, one week, starting March 2
OBSTETRICS—Intensive Course, two weeks starting March 2
PEDIATRICS—Intensive Course, two weeks, starting April 6
MEDICINE—Intensive General Course, two weeks, starting May 4
  Electrocardiography and Heart Disease, two weeks, starting March 16
  Allergy, one month and six months, by appointment
UROLOGY—Intensive Course, two weeks, starting April 13
  Ten-Day Practical Course in Cystoscopy starting every two weeks
DERMATOLOGY—Intensive Course, two weeks, starting May 11

TEACHING FACULTY—ATTENDING
STAFF OF COOK COUNTY HOSPITAL

ADDRESS: REGISTRAR, 707 South Wood Street
Chicago 12, Illinois

Medical Association's 102nd annual meeting in New York, June 1 to 5, 1953, is **Dr. William H. Dearing, Jr.**, of Rochester.

* * *

Dr. Carleton Nelson of the Worthington Clinic, was named a diplomate of the American Board of Surgery in November. Dr. Nelson was graduated from the University of Minnesota and did his postgraduate work in surgery at the University of Minnesota and Minneapolis General Hospitals.

* * *

Among the speakers, sponsored by the Hennepin County Tuberculosis Association during the first week of the 1953 Christmas Seal Campaign, is **Dr. Sumner S. Cohen**, assistant medical director at Glen Lake Sanatorium.

* * *

Dr. Frederick J. Kottke, Minneapolis, was the principal speaker at a meeting of the Cambridge Community Club, held December 2. Dr. Kottke, on the medical staff of the University Hospitals, is the son of Mr. and Mrs. G. G. Kottke of Cambridge. He showed pictures and talked on his recent trip to Europe.

* * *

Governor John S. Battle of Virginia has written the governors of the other forty-seven states asking each of them to invite a seventy-five-year-old physician, a citizen of his state, to attend the first Western Hemisphere Conference of the World Medical Association to be held in Richmond, Virginia, April 23 to 25, 1953. The expense of the trip of the physicians from the states will be borne by the A. H. Robins Company of Richmond, which is celebrating its seventy-fifth anniversary. Travel and other expenses of delegates from the medical societies of the American republics as well as the invited physicians will also be borne by the A. H. Robins Company. Guests will be able to visit historic spots in Virginia including Williamsburg, as well as attend the meeting of the World Medical Association.

* * *

Dr. John W. James has become associated with **Dr. Ellery M. James** in the practice of anatomical and clinical pathology with offices at 657 Lowry Medical Arts Building and laboratory at St. Joseph's Hospital, Saint Paul. Dr. James is a diplomate of the American Board of Pathology.

* * *

While on a recent visit to Santiago, Chile, **Dr. Thomas B. Magath**, chairman of the section of clinical pathology and biochemistry at the Mayo Clinic, was made an honorary member of the medical faculty of the University of Chile, in recognition of his contributions to the field of parasitology.

* * *

Dr. Raymond G. Halvorson, formerly of Duluth, entered surgical practice at Rockford, Illinois, in December after leaving the United States Public Health Service. Dr. Halvorson, a 1945 graduate of Marquette University, Milwaukee, Wisconsin, interned at St. Mary's Hospital in Duluth and joined

North Shore Health Resort
Winnetka, Illinois
on the Shores of Lake Michigan

A completely equipped sanitarium for the care of nervous and mental disorders, alcoholism and drug addiction offering all forms of treatment, including electric shock.

SAMUEL LIEBMAN, M.S., M.D.
225 Sheridan Road **Medical Director** **Phone Winnetka 6-0211**

the public health service in 1947 after serving with the United States Navy.

* * *

Dr. Kenneth E. Ahola joined **Dr. Robert T. Kelly** in practice at Nashwauk in November. Dr. Ahola is a graduate of the University of Minnesota Medical School where he was a classmate of Dr. Kelly. Both doctors interned at Minneapolis General Hospital.

* * *

At the annual meeting in November, the Blue Earth Valley Medical Association elected **Dr. Carl Krause,** of Fairmont, president, and **Dr. R. L. Parsons,** of Triumph-Monterey, vice president. **Dr. Herbert Boysen,** of Madelia, was re-elected secretary-treasurer.

* * *

Dr. George Kleifgen, of Park Rapids, resigned as village health officer, November 1.

* * *

Dr. Harvey Basinger was recently elected to the rank of associate in the International College of Surgeons. Dr. Basinger has been a member of the College of Surgeons since 1928.

* * *

Dr. R. J. Lindeman, of Paynesville, entered active military service in January. Dr. Lindeman reported to Gunter Air Force Base in Montgomery, Alabama, January 1.

* * *

Dr. Richard Jesse began medical practice in Truman in December. Dr. Jesse, who was recently discharged from the Army Medical Corps and will use the office and equipment of **Dr. M. J. Lester** until Dr. Lester is released from the Navy.

* * *

Dr. M. G. Fredricks, Duluth, was elected president of the Minnesota Dermatological Society at the annual meeting held November 26 at Ancker Hospital in Saint Paul. Dr. Fredricks is a staff member of the Duluth Clinic.

* * *

Dr. J. S. Blumenthal addressed the Ralph Pohl Post of the American Legion and Auxiliary on December 4, and gave his impressions of his recent trip to Europe.

* * *

Mayo Clinic staff members participating in the American Medical Association clinical session December 4, in Denver, Colorado, were: **Drs. E. V. Allen, C. F. Gastineau, F. J. Heck, R. L. Kennedy, L. C. Kolb, W. F. Kvale, G. B. Logan, A. M. Olsen, H. F. Polley, L. E. Prickman, T. W. Mears** and **H. J. Moersch.**

* * *

Among Minnesota's campaign leaders who heard Basil O'Connor of New York, president of the National Foundation for Infantile Paralysis, present cost statistics on polio care, December 5, in Saint Paul, were **Dr. Willis E. Dugan** of Minneapolis, chairman of the Minnesota March of Dimes, and **Dr. Walter Ramsey,** of Saint Paul, chairman of the Ramsey County chapter of the Foundation.

Dr. Robert Holmen, Saint Paul, spoke at the meeting of the Brotherhood of the Bethel Lutheran Church, December 5, at Willmar. Dr. Holman is a member of the Board of Charities of the Minnesota Conference of the Augustana Synod and has compiled, as a personal hobby, a history of all Lutheran bodies and synods in this country. He talked on his work of collecting and writing church history.

* * *

Dr. John D. McCarthy, resident pathologist at the University Hospitals, University of Minnesota, recently became engaged to Gladys Lucille Johnson, a senior nursing student at the University of Minnesota.

* * *

Dr. Milton Plucker, a graduate of Nebraska University, joined **Dr. M. I. Hauge** on the Clarkfield Clinic staff, Clarkfield, December 20.

* * *

Mayo Clinic staff members to attend the Western Surgical Association meeting, held at Houston, Texas, December 4 to 6, were **Drs. J. L. Bollman, V. S. Counseller, R. K. Ghormley, J. H. Grindlay, E. S. Judd, C. W. Mayo, and H. Waltman Walters.**

For

Professional Supplies

and

Service

BROWN & DAY, INC.

St. Paul 1, Minnesota

* * *

Dr. O. G. McDonald, member of the Duluth Clinic, was the principal speaker at the annual meeting of the Gogebic County (Michigan) Medical Society, December 2. Dr. McDonald spoke on, "Diseases of the Stomach—With Special Reference to the Ulcer Problem."

* * *

Minnesota chapters of the National Foundation for Infantile Paralysis will be in debt a total of $750,000 because of the 1952 epidemic. **Dr. Willis E. Dugan,** state chairman of the March of Dimes campaign, pointed out this fact in a talk before Ramsey County workers to discuss the financial situation, December 5.

* * *

Dr. J. A. Cosgriff, Sr., of Olivia, attended the American Medical Association meeting, held at Denver, Colorado, the week of December 8.

* * *

Dr. Philip S. Hench, of Rochester, attended the dedication of a public park in Havana, honoring the famed yellow fever workers—Drs. Walter Reed, Jesse Lazear and their associates—December 3. The park is located on the spot where Dr. Reed directed his experiments that led to the wiping out of yellow fever. Dr. Hench has done considerable research, beginning in 1939, on the real location of the yellow fever camp site in Cuba.

* * *

Dr. and Mrs. Earl Lowe, of South Saint Paul, returned recently from a two months' sojourn in Colorado Springs, Colorado. Dr. Lowe, who has been ill, has now resumed his practice.

* * *

Drs. Theodore Greenfield, and **H. E. Gaustad** of Cokato and **Dr. Gordon Watson** of Minneapolis returned December 2 from a vacation trip on which they served as members of a crew of six, sailing a boat in the region of the Bahama Islands, southeast of Florida.

* * *

Dr. Carleton Chapman, Associate Professor of Medicine, University of Minnesota, spoke at a pathological conference on heart disease, held at Redwood Falls in November for the medical staff of the Redwood Falls Municipal Hospital.

* * *

Dr. L. F. Van Veen joined **Drs. L. M. Evans** and **R. J. Cesnik** in their practice at Sauk Rapids, in December.

DANIELSON MEDICAL ARTS PHARMACY, INC.

10-14 Arcade, Medical Arts Building

825 Nicollet Avenue—Two Entrances—78 South Ninth Street

MINNEAPOLIS

PHONES:
ATLANTIC 3317
ATLANTIC 3318

HOURS:
WEEK DAYS—8 to 7
SUN. AND HOL.—10 TO 1

HOMEWOOD HOSPITAL is one of the Northwest's outstanding hospitals for the treatment of Nervous Disorders—equipped with all the essentials for rendering high-grade service to patient and physician.

Operated in Connection with
Glenwood Hills Hospitals

HOMEWOOD HOSPITAL
Corner Penn and Plymouth Avenues North
Minneapolis Minnesota

The Birches Sanitarium, Inc.
2391 Woodland Avenue
Duluth 3, Minnesota

A hospital for the care and treatment of Nervous and Mental disorders. Quiet, cheerful environment. Specially trained personnel. Recreational and occupational therapy.

Dr. L. R. Gowan, M.D., M.S., Medical Director

Dr. Wallace Anderson, of Lakeville, held an immunization clinic at the Lakeville High School, December 10.

* * *

Dr. A. V. Stoesser, department of pediatrics, and **Dr. Norman Nelson,** department of internal medicine, University of Minnesota, presented the scientific program at the meeting of the Southwestern District Medical Society, December 6, held at Dickinson, North Dakota.

Dr. Stoesser spoke on, "Differential Diagnosis and Treatment of Respiratory Diseases in Children," and Dr. Nelson on, "Psychosomatic Medicine."

BLUE SHIELD NEWS

Among the benefit increases added to the Minnesota Blue Shield contract effective last October 1 was that of consultation. Since consultation with another physician is frequently an advantage to a seriously ill patient, this service as customarily used in medical practice was added to those already provided by the contract.

However, the possibility of abuse of the consultation privilege and the potential excessive cost, as previously experienced by one plan at least, required that certain safeguards regarding it also be placed in the contract. It was for these reasons consultation was limited to one service per subscriber per contract year at a cost of $10 per consultation. In addition, to assure that only serious conditions or vitally important issues constitute justifiable reason for consultation the words "bona fide and urgent need" were inserted in the consultation definition. And only to control any tendency to abuse the consultation privilege, the clause "the final determination of such need, however, to be made by Minnesota Medical Service, Inc.," were inserted in the contract.

It is of interest now, that during the first month of the operation of this contract provision, it is not clearly understood by physicians. This is evident from the receipt of three different types of ineligible consultation claims. One type clearly was not intended to be included as a consultation service and the other two types represent abuses, even though unintentional, for which safeguards were inserted in the contract.

First of these consists of daily attendance of the subscribers by a specialist other than the surgeon for the whole postoperative period when no serious medical complication is involved. Such claims are being received, are marked "Consultation," and specify that the medical specialist was called in to see the patient by the surgeon. In such cases, when another condition warrants it, a consultation fee is paid, or if serious medical complications are involved, routine in-hospital medical care fees are paid as provided by the contract.

In the second group are found those claims of doctors associated in practice calling in one another to see a case in the office or hospital when no serious hazard to the subscriber is involved. For instance, one partner called the other one in for an opinion about a submucous resection while the patient was at the office and the condition involved was a chronic one without the need for immediate surgery. Other similar consultations have involved chronic or recurrent non-hazardous conditions involving patients in the hospital.

And the third type of ineligible consultation is one in the home or office when a rather common condition is involved. Among the best examples of this is a home call to see an ambulatory patient about a commonplace gynecologic complaint. Neither the condition nor other circumstances involved fulfill the conditions regarding consultation services stipulated in the contract.

It is apparent from these facts that not only the purpose of adding consultation services to those previously provided, but also the limiting provisions and their reasons may not have been clearly understood by all members of the profession. Used properly consultation is of marked benefit to the subscriber as well as of both professional and financial advantage to the attending physician. Only by avoidance of abuses of the consultation privilege will it be possible in the future to increase the number of consultations per year at the fee for consultation. It is hoped that continuing experience with consultation services will warrant these increases in the future.

Blue Shield payment for surgical-medical care of Minnesota Medical Service, Incorporated, participant subscribers:

For 12 months of 1951	$3,095,213.00
For 10 months of 1952	3,070,475.00

Blue Cross payment for hospital care of Minnesota Hospital Service Association participant subscribers:

For 12 months of 1951	$11,312,390.00
For 10 months of 1952	10,426,444.00

* * *

The National Fund for Medical Education, with offices in New York, is launching a five million dollar industry-wide solicitation campaign in support of medical education in the United States.

Colby M. Chester, newly-appointed chairman of the fund's Committee of American Industry, will direct a nationwide organization to mobilize business concerns behind the nation's hard-pressed medical schools. Mr. Chester is honorary chairman of the board of General Foods Corporation.

The National Fund for Medical Education is a lay organization which is working in conjunction with the American Medical Education Foundation, founded by the American Medical Association two years ago. The AMEF's goal for 1953 is included in the amount.

The National Fund's Committee of American Industry, which will spearhead the campaign, will be composed of 100 ranking business leaders from every segment of industry. Their task will be to educate industry as to the critical needs of the medical schools. The committee contemplates solicitation of 25,000 American business concerns during 1953. Mr. Chester plans to appoint a vice-chairman, an advisory council, and division chairmen, who will direct the activities of more than fifty industrial committees. E. J. Ade, New York, has been appointed fund-raising director for the campaign.

Hall, Anderson & Nordehn

PRESCRIPTION PHARMACY
BIOLOGICALS
PHYSICIANS' SUPPLIES

SAINT PAUL, MINN.

LOWRY MEDICAL ARTS BUILDING
TELEPHONE: CEDAR 2735

CROLEUM SUSPENSOID
Topical Applicant Vehicle

. . . non-drying colloidal emulsion . . . flows readily . . . frequently used as a base for topical prescription of Sulfur, Calomel, Copper Sulfate and many others . . . facilitates penetration of medicaments . . . an excellent non-irritating dermal emolient used without adding medication.

SAMPLES ON REQUEST

Chester-Kent, Inc.
100 S. WABASHA, ST. PAUL 1, MINN.

RADIUM RENTAL SERVICE
4340 W. 24TH STREET
MINNEAPOLIS 5, MINNESOTA
TEL. ATLANTIC 5297

Radium element prepared in type of applicator requested

ORDER BY TELEPHONE OR MAIL
PRICES ON REQUEST

PATTERSON SURGICAL SUPPLY COMPANY
103 East Fifth St., St. Paul 1, Minn.
HOSPITAL AND PHYSICIANS SUPPLIES AND EQUIPMENT
Cedar 1781-82-83

BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical Libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

BOOKS RECEIVED FOR REVIEW

TEXTBOOK OF SURGERY. H. F. Moseley, M.A., D.M., M.Ch.(Oxon), F.A.C.S., F.R.C.S. (Eng.), F.R.C.S. (C.). Assistant Professor of Surgery, McGill University; Associate Surgeon, Royal Victoria Hospital, Montreal, Canada. Foreword by G. Gavin Miller, M.D., C.M., M.Sc., F.R.C.S. (C), F.A.C.S., Chairman of the Surgical Department, McGill University; Surgeon-in-Chief, Royal Victoria Hospital, Montreal, Canada. 896 pages. Illus. Price $15.00, cloth. St. Louis: C. V. Mosby Co., 1952.

THE LITERATURE OF STREPTOMYCIN, 1944-1952. Selman A. Waksman. 553 pages. Price $5.00, cloth. New Brunswick, N. J.: Rutgers University Press, 1952.

DERMATOLOGY. Essentials of Diagnosis and Treatment. Marion B. Sulzberger, M.D. Professor and Chairman, Department of Dermatology and Syphilology, New York University Post-Graduate Medical School; Director of Dermatology and Syphilology, Skin and Cancer Unit and University Hospital, New York University-Bellevue Medical Center; Captain (MC) USNR., and Consultant Dermatologist to the Bureau of Medicine and Surgery, U. S. Navy; and Jack Wolf, M.D., Associate Professor of Clinical Dermatology and Syphilology, New York University Post-Graduate Medical School; Attending Dermatologist and Syphilologist, Skin and Cancer Unit and University Hospital, New York University-Bellevue Medical Center. 592 pages. Illus. Price $10.00, cloth. Chicago: Year Book Publishers, 1952.

SURGERY OF THE CHEST. By Julian Johnson, M.D., D.Sc.(Med.), Professor of Surgery, School of Medicine and Graduate School of Medicine, University of Pennsylvania, and Charles K. Kirby, M.D., Assistant Professor of Surgery, School of Medicine, University of Pennsylvania. Illustrations by Edna Hill. (Handbook of Operative Surgery). 387 pages. Price $9.00. Chicago: The Year Book Publishers, Inc., 1952.

The authors state in the preface, "Our objective, both in the text and in the illustrations, has been to present the step-by-step details of operative technic in as clear a manner as possible." This objective has been admirably achieved. The text is brief, incisive, and related largely to the explanation of well-executed line drawings, which convey most of the information in this book.

The first chapter deals briefly with surgical physiology of the thorax, diagnostic studies in thoracic surgical patients, pulmonary function tests, and pre-operative preparation. The second chapter deals with the management of chest injuries. Chapters 3 to 9 cover the various aspects of pulmonary surgery. The presentation of the pulmonary surgical anatomy is especially excellent. There is a chapter on surgery of the esophagus, one on surgery of heart and great vessels, and one devoted to surgery of pulmonary tuberculosis. The chapter on surgery of pulmonary tuberculosis is necessarily incomplete and contains a number of procedures that are now seldom done in many chest centers around the country. The final chapter is devoted to the repair of diaphragmatic hernias, the operative correction of pectus excavatum, and the excision of mediastinal tumors.

This book contains a lot of useful information presented in a clear-cut way and is well worth reading by both the thoracic specialist and the general surgeon who is faced with some thoracic surgical problem.

Lyle A. Tongen, M.D.

SCHOOLS OF NURSING IN THE UNITED STATES. Published by Committee on Careers in Nursing, National League for Nursing, 2 Park Avenue, New York 16, New York.

Published for the information of the prospective nurse, this pamphlet contains a list of training schools

AT YOUR CONVENIENCE, DOCTOR . . .

you are cordially invited to visit our new and modern prescription pharmacy located on the street floor of the Foshay Tower, 100 South Ninth Street.

With our expanded facilities we will be able to increase and extend the service we have been privileged to perform for the medical profession over the past years.

Exclusive Prescription Pharmacy

Biologicals Pharmaceuticals Dressings
Surgical Instruments Rubber Sundries

JOSEPH E. DAHL CO.
(Two Locations)
100 South Ninth Street, LaSalle Medical Bldg.
ATlantic 5445 Minneapolis

Ulmer
PHARMACAL COMPANY
1400 Harmon Place
Minneapolis 3, Minnesota

Send for new booklet M-153b
"ULMER SPECIALIZED OINTMENTS"
describing 24 creams and ointments

for nurses and informative material of value to the young woman contemplating a career in nursing. Quantity prices: up to 100 copies, 5 cents each; 100 copies, $4.50; 500 copies, $21.75.

DIABETES GUIDE BOOK FOR PHYSICIANS. New York: The American Diabetes Association, Inc., 1952.

Figuring the optimum diet for a diabetic and furnishing him with easily understandable instructions as to his diet is not a simple matter for the physician. Often the services of a hospital dietitian seem almost essential.

This little booklet, however, put out by the American Diabetes Association, is primarily for use of the physician who has to figure out individual diets for his diabetic patients and instruct them as to their diets, without the aid of a dietitian. The booklet provides the simplest solution, that we know of, to this rather difficult job. We like it particularly because it provides lists of food exchanges and thus provides a great variety in the diet. We also like it because the sample diets contain substantial amounts of carbohydrate, a normal amount of protein and an amount of fat only slightly above that in a normal diet. The foods listed are all those contained in a normal diet and none is a special diabetic food.

By giving a copy of the booklet to the patient, the need of typewritten food lists is obviated. The booklet, however, is not complete enough to provide full instruction to the diabetic about his disease.

Copies of the Diabetes Guide Book may be obtained by physicians from the office of the American Diabetes Association, Inc., 11 West 42nd Street, New York 18, New York.

Incidentally, the American Diabetes Association publishes a bimonthly journal entitled *Diabetes* for the profession and a bimonthly publication entitled *Forecast* for the diabetic patient, both of which are very much worth while.

C.B.D.

DERMATITIS FROM INDUSTRIAL OILS AND CHROMATES

(Continued from Page 56)

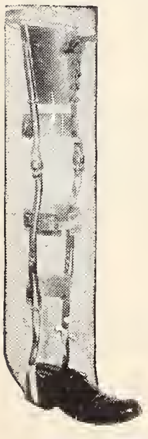
of personal cleanliness, had folliculitis of the nape and dorsums of the hands and arms where he was exposed to oils and dirt while cleaning engines. This might have been avoided by personal care, but his shirts were rarely laundered, and his habit of wearing a greasy handkerchief around his neck contributed to the folliculitis. The last report showed healing of the areas, and I think we have taught him how to keep clean. The *second* and *third* cases are those of exposure to Nalco, a substance used in preventing corrosion in Diesels. It is composed of 72 per cent sodium chromate, 16 per cent sodium tetraborate, and sodium nitrate 12 per cent. Although only 0.6 oz. per gallon of water is used, a person allergic to the substance would have a violent reaction. The second and third patients were exposed to this substance in line of duty, and had repeated attacks of eczematous dermatitis (as opposed to the follicular dermatitis seen from oils). I applied patch tests to the forearm using 0.5 per cent Nalco and found strongly positive reactions in fourteen hours. Reactions to 0.5 per cent sodium chromate were also positive. Reactions to the other ingredients of Nalco were negative. Control tests were negative. The second patient had repeated attacks of eczema though he was not re-exposed to Nalco, but the patches of dermatitis were seen at the site of contact with chromium plated metal fasteners, eyelets on shoes, snaps on underwear, or at the site of contact with leather. The third patient changed occupations and had no recurrence. These two patients present clearcut cases of contact dermatitis to a specific chemical, in this instance sodium chromate, found in a special location in the railroad industry.

I'm building up a cash reserve with a savings account in the American National Bank where I'm guaranteed 2% interest on the *entire amount I have on deposit* in my savings account.

THE AMERICAN NATIONAL BANK
OF SAINT PAUL

Bremer Arcade **Robert at 7th** **CE 6666**

Member Federal Deposit Insurance Corporation


SKILL AND CARE!

Combine with quality materials in all Buchstein-Medcalf orthopedic appliances. Our workmanship and scientific design conform to the most exacting professional specifications. Accepted and appreciated by physicians and their patients for more than 45 years.

ARTIFICIAL LIMBS, TRUSSES,
ORTHOPEDIC APPLIANCES,
SUPPORTERS, ELASTIC HOSIERY

Prompt, painstaking service

Buchstein-Medcalf Co.
223 So. 6th St. **Minneapolis 2, Minn.**

APR 6

COSMETIC *HAY FEVER?*
Prescribe UNSCENTED AR-EX Cosmetics
When perfumes or scented cosmetics cause allergic reactions — prescribe UNSCENTED AR-EX COSMETICS. Clinically tested to meet your high standards. Smart, fashion-right for patient acceptance. All needed beauty aids. Send for free Formulary
AR-EX COSMETICS, INC., 1036 W. VAN BUREN ST., CHICAGO 7, ILL.

AR-EX
HYPO-ALLERGENIC
Cosmetics
Clinically tested on allergic patients for use by allergic patients

Index to Advertisers

Abbott Laboratories 12
American National Bank 92
Anderson, C. F., Co., Inc. 20
Ar-Ex Cosmetics, Inc. 93
Ayerst, McKenna & Harrison, Ltd 16

Bayer Co. 21
Benson Optical Co. 80
Birches Sanitarium 89
Brown & Day, Inc. 88
Buchstein-Medcalf Co. 92

Caswell-Ross Agency 2
Chester-Kent, Inc. 90
Chicago Medical Society 81
Ciba Pharmaceutical Products, Inc. 10
Classified Advertising 94
Continental Casualty Co. 14
Cook County Graduate School of Medicine 86
Crestview Hospital 84

Dahl, Joseph E., Co. 91
Danielson Medical Arts Pharmacy, Inc. 88
Druggists Mutual Insurance Co. 93

Ewald Bros. Inside Back Cover

Glenwood Hills Hospitals 95

Hall, Anderson & Nordehn 90
Hazelden Foundation 81
Homewood Hospital 89

Juran & Moody 83

Knox Gelatine 85

Lederle Laboratories Division Facing page 16
Lilly, Eli, & Co. Front cover, 22

Mead Johnson & Co. 96
Medical Protective Co. 86
Merck & Co., Inc. 5
Milwaukee Sanitarium Back cover
Mounds Park Sanitarium Back cover
Murphy Laboratories 80

New Orleans Graduate Medical Assembly 78
North Shore Health Resort 87

Parke, Davis & Co. Inside front cover, 1
Patterson Surgical Supply Co. 90
Pfizer, Chas., & Co. 19
Philip Morris & Co., Ltd. 18
Physicians & Hospitals Supply Co. 15, 93
Physicians Casualty Association 20
Professional Credit Protective Bureau 11

Radium Rental Service 90

St. Croixdale Sanitarium 4
Schering Corporation 13
Searle, G. D., & Co. 77

Ulmer Pharmacal Co. 91
Upjohn 79

Winthrop-Stearns, Inc. 17

PHYSICIANS AND HOSPITALS SUPPLY CO., Inc.
1400 HARMON PLACE, MINNEAPOLIS, MINN.
INSTRUMENTS · TRUSSES · EQUIPMENT · PHARMACEUTICALS · DRUGS
MAIN 2494

Insurance at a Saving
Druggists' Mutual Insurance Company
OF IOWA, ALGONA, IOWA
Fire - Tornado - Automobile Insurance
Prompt Loss Service
MINNESOTA REPRESENTATIVE—S. E. STRUBLE, WYOMING, MINN.

Classified Advertising

Replies to advertisements with key numbers should be mailed in care of Minnesota Medicine, *2642 University Avenue, Saint Paul 14, Minn.*

FOR RENT—Attractive doctor's suite in south Minneapolis. Wonderful location for a practice to be built up, or as an outlying office for a downtown doctor. Write Wm. L. Cochrane, 7301 Fremont Avenue South, Minneapolis 19, Minnesota. Telephone RO 9-8758.

WANTED—Midwest Group of twenty physicians have opening for assistant in general surgery including traumatic, industrial and minor injuries; liberal salary depending upon experience or previous training. Address E-330, care Minnesota Medicine.

WANTED—Location for Young General Practitioner. Will buy practice or locate in town needing a doctor. Address E-339, care Minnesota Medicine.

WANTED—M.D. for general practice starting January 1, 1953, for two years to replace partner called into service. Small town—small hospital. Address E-337, care Minnesota Medicine.

DOCTOR NEEDED—or two in partnership. Former doctor in service. Population 752, Area 4000. Clinic building, housing available. Nearest doctor hospital, Morris 19 miles. Desirable location. For details, contact Melville Skoog, Committee Secretary, Herman, Minnesota.

WANTED—Good used urological instruments, especially resectoscope and panendoscope. Address Dr. A. S. Tauber, University of Minnesota Hospitals, Minneapolis 14, Minnesota.

WANTED—M.D. for general practice for two-year period to replace associate called into service. Ground floor clinic—hospital in town. Large surgical practice. Address E-348, care Minnesota Medicine.

EXCELLENT OPPORTUNITY for able Catholic physician. Fine hospital facilities and no outlay. Address E-346, care Minnesota Medicine.

WISCONSIN—Psychiatrists and Physicians Needed . . . The State is expanding and developing treatment services under the direction of Dr. Leslie Osborn, Division of Mental Hygiene, and of Mr. Russell Oswald, Division of Corrections . . . Professional staffs being increased. New patient units under construction . . . Positions at Chippewa Falls, Madison, Oshkosh, Union Grove and Waupun . . . Wisconsin has had 47 years of uninterrupted career service . . . Eligibility for medical positions based on evaluation of credentials by committee of professional consultants. Starting salaries—Physician I $7200, Psychiatrist I $7620. More experienced psychiatrists start at higher levels . . . Division of Mental Hyigiene program directly linked with Medical School at University of Wisconsin . . . Approved residency stipends available July, 1953. First year $2500; second $3000; third $3600; then two years as Psychiatrist I . . . Write Robert C. Parkin, M.D., Medical Recruiting Consultant, Bureau of Personnel, State Capitol, Madison, Wisconsin.

WANTED—General practitioner for small southern Minnesota town. No competition. Equipment to fill five rooms for sale. Very reasonable. Local bank will finance. Lucrative practice can be built up. Address E-347, care Minnesota Medicine.

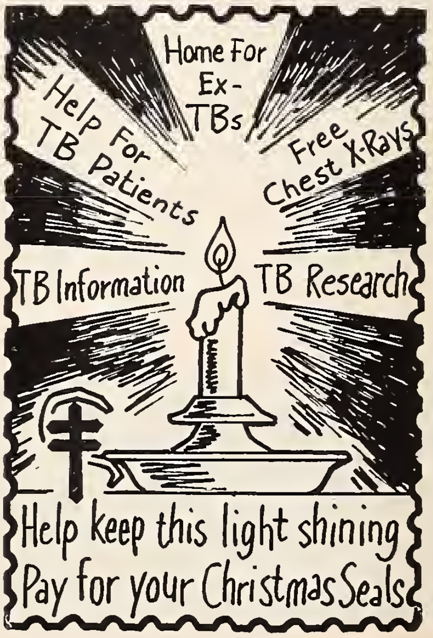
WANTED: Physician interested in general practice, internal, and industrial medicine to join five-man clinic. Salary and future member of partnership offer excellent opportunity. Address E-345, care Minnesota Medicine.

WANTED—General Practitioner to assume immediately large, unopposed rural practice near Twin Cities. Entering military service, probably February 10. Nurse and secretary staying. Eight-room, first-floor clinic equipped. Gross $25,000. New hospital with unlimited privileges. Housing available. Later partnership available. No investment necessary. Address E-349, care Minnesota Medicine.

WANTED—Full-time registered nurse to work in clinic consisting of twelve doctors. Regular hours, good pay, and good personnel policies. Also trained physical therapist to run Physical Therapy Department in clinic of twelve doctors. Address Manager, Worthington Clinic, Worthington, Minnesota.

WANTED—General surgeon willing to do some general practice in southern Minnesota city of 20,000. Two new hospitals. New office building and full equipment adequate for two other physicians. Partnership advantage in near future. Practice established 25 years. Must be able to start March 15. Address E-342, care Minnesota Medicine.

WILL LEASE fully equipped hospital in Northern Minnesota resort area. Owner being called into Armed Services. Partnership terms at later date. Contact Walker Hospital, Walker, Minnesota.

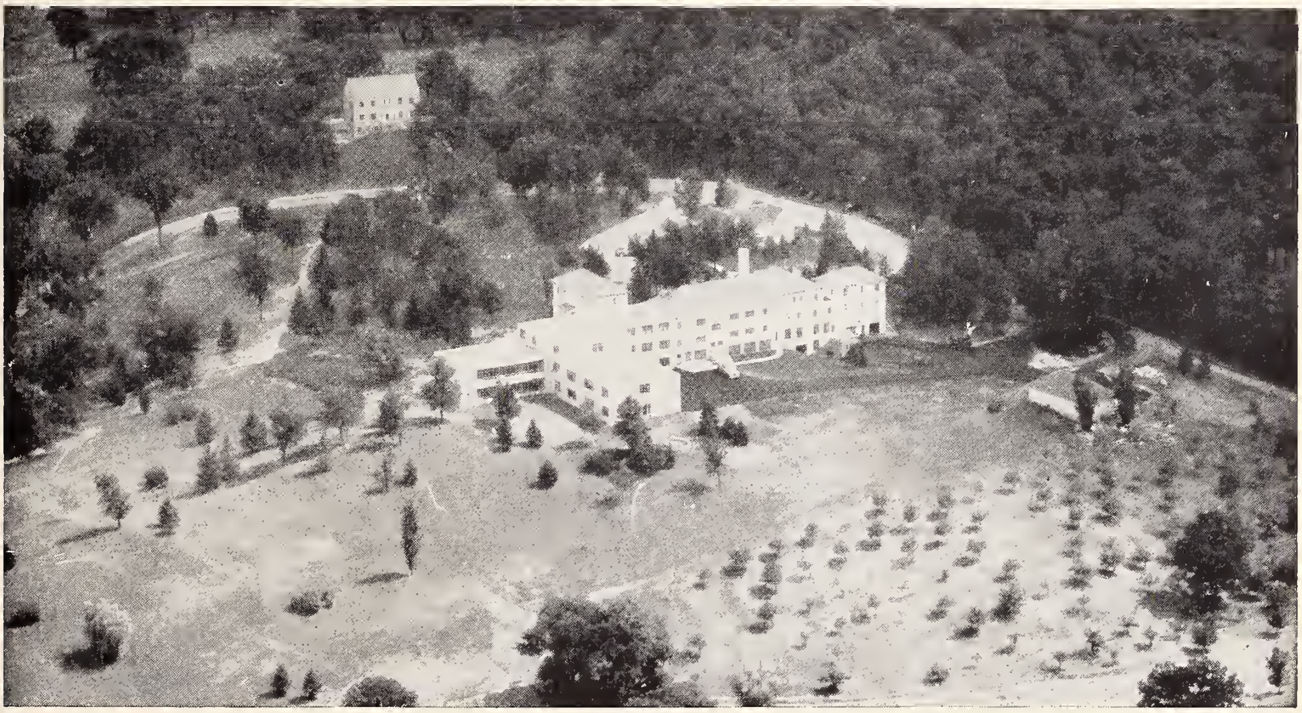


Glenwood Hills Neuro-Psychiatric **Hospital**

3901 Golden Valley Road **Minneapolis 22, Minnesota** **JUniper 2771**

Voluntary *Non-Profit* *Non-Sectarian*

140 acres of rolling, wooded and lake land—seven minutes from downtown Minneapolis



Electroencephalography

Rehabilitation Center **Therapies** **Laboratory**

Write for additional information

— ALSO —

Glenwood Hills School of Neuro-Psychiatric **Nursing**

Where attitudes and nursing skills are combined to give the maximum in patient care

One Year Course *Tuition Free* *Room and Board Free*

For information regarding the Nursing School—please write
Helen Swenson Rascop, R.N., Director of Nurses, Glenwood Hills Hospital

Dextri-Maltose
MEAD
D No 1 M

For routine infant feeding. The basic Dextri-Maltose product.

Dextri-Maltose

MEAD

MEAD JOHNSON & COMPANY
Evansville 21, Ind., U.S.A.

Dextri-Maltose
MEAD
D No 2 M

Especially indicated for premature infants. Contains 50 mg. ascorbic acid per ounce.

Dextri-Maltose
MEAD
D No 3 M

To aid in counteracting constipation. Contains 3% potassium bicarbonate.

designed with singleness of purpose

Designed and manufactured specifically for infant formulas, Dextri-Maltose® has an unequaled background of successful clinical use. Safety for your infant patients is assured by the dry form of this carbohydrate, meticulous laboratory control at all stages in its manufacture, and hermetically sealed, key-opening cans. Dextri-Maltose is palatable but not sweet; does not create a "sweet tooth" in infants.
Easily measured without spilling or waste and almost instantly soluble, Dextri-Maltose is convenient for the mother.

Chloromycetin®

notably effective

---

well tolerated

BROAD SPECTRUM ANTIBIOTIC

CHLOROMYCETIN (chloramphenicol, Parke-Davis)
is available in a variety of forms, including:

Chloromycetin Kapseals,® 250 mg., bottles of 16 and 100.
Chloromycetin Capsules, 100 mg., bottles of 25 and 100.
Chloromycetin Capsules, 50 mg., bottles of 25 and 100.
Chloromycetin Ophthalmic Ointment, 1%, ⅛-ounce collapsible tubes.
Chloromycetin Ophthalmic, 25 mg. dry powder for solution, individual vials with droppers.

MEDICAMENTA VERA
PD & CO.

Parke, Davis & Company
DETROIT, MICHIGAN

THE ACHIEVEMENT OF THE MASTER CRAFTSMAN PROUDLY BEARS HIS NAME

I*nstrumentum ad artem medicae iuvandem.* "An instrument for aiding the art of medicine," indeed. For that is the motto proudly emblazoned on the Beck-Lee shield which is displayed on every *Cardi-all* instrument—and by its very meaning conveys the purpose of the *Cardi-all* to the medical profession.

Expressed another way: the *Cardi-all* makes it possible for any physician to afford a fine, sensitive electrocardiograph instrument that will provide heart records of high fidelity and precision.

CLINICALLY PRECISE—*Full frequency Galvomotor* assures accurate, dependable cardiograms.*

SIMPLE-TO-OPERATE—*Anyone with little or no experience in the operation of an electrocardiograph can operate the Cardi-all with less than an hour of training and make a complete record in a few minutes. An ingeniously designed recording unit permits change of paper roll in about 10 seconds.*

FULLY PORTABLE—*Completely loaded and including all accessories, this fine direct-writing electrocardiograph weighs only 27 pounds.*

AUTOMATICALLY CONTROLLED—*Stylus wandering due to line voltage variation virtually eliminated by means of specially designed circuits. The Cardi-all provides for an adequately stable iso-electric line for diagnostic purposes. Automatic self-grounding circuits plus the electronic separation of interfering voltages does away with the problem of AC interference.*

LOW IN COST—*Complete with all accessories, the Cardi-all is economically priced at only $495.*

*Trademark

Complete with all accessories *$495*

THE *NEW* PORTABLE BECK-LEE

Cardi-all

DIRECT WRITING ELECTROCARDIOGR

MADE BY THE WORLD'S LARGEST EXCLUSIVE
MANUFACTURER OF ELECTROCARDIOGRAPHS
DISTRIBUTED BY

PHYSICIANS & HOSPITALS SUPPLY CO., INC.

1400 Harmon Place, Minneapolis 3, Minnesota

QUARTZ STRING ELECTROCARDIOGRAPHS

Model E $645 **Model ERA $725**

Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 36 **February, 1953** **Number 2**

Contents

INSIDE THE BRITISH HEALTH PLAN.
James Rogers Fox, M.D., Minneapolis, Minnesota 125

HEMOLYTIC ANEMIA.
Paul S. Hagen, M.D., Minneapolis, Minnesota... 128

DANGER OF AMMONIUM CHLORIDE ACIDOSIS.
James Myhre, M.D., Minneapolis, Minnesota.... 133

FRIEDLANDER'S PNEUMONIA.
John P. Dahlstet, M.D., Mankato, Minnesota.... 135

THE RESPONSIBILITY OF THE PRACTICING PHYSICIAN AND HEALTH DEPARTMENT IN THE CARE OF THE AGED.
Robert N. Barr, M.D., Minneapolis, Minnesota... 137

THE USE OF HYDROCORTISONE ACETATE (COMPOUND F ACETATE) IN THE TREATMENT OF POSTTRAUMATIC BURSITIS OF THE KNEE AND ELBOW.
Edward D. Henderson, M.D., and *Charles C. Henderson, M.D.,* Rochester, Minnesota........ 142

SENILE NODULAR THYROPATHY.
Harold H. Joffe, M.D., Duluth, Minnesota...... 145

PHYSICAL SYMPTOMS OF DEPRESSION.
William S. Chalgren, M.D., Ph.D., Mankato, Minnesota 148

HERPES ZOSTER WITH MOTOR PARALYSIS.
T. Paul Blanshard, M.D., M.R.C.P., Minneapolis, Minnesota 152

CASE REPORT:
Perforated Interventricular Septum.
David V. Sharp, M.D., Minneapolis, Minnesota. 153

LABORATORY AIDS TO MEDICAL PRACTICE:
Sulfobromophthalein Test of Liver Function.
Charles A. Owen, Jr., M.D., Rochester, Minnesota 155

PRESIDENT'S LETTER:
A Good Beginning............................ 157

EDITORIAL:
Panel Practice............................ 158
Gamma Globulin in Polio............................ 158
Public Relations and the Medical Profession..... 159
Dr. Dublin Retires............................ 160

AMERICAN MEDICAL ASSOCIATION—Summary—Clinical Session............................ 161

THE MINNEAPOLIS DIABETES DETECTION CAMPAIGN—1952 163

MEDICAL ECONOMICS:
Hospital Accreditation Group Issues Progress Report 164
Editor Hits "Federal Thought Control"......... 165
Communist Logic Falls Short.................. 166

MINNEAPOLIS SURGICAL SOCIETY:
Meeting of October 1, 1952.................. 167
Pancreatitis Complicating Common Duct Surgery.
Virgil J. P. Lundquist, M.D., Minneapolis, Minnesota 167
Carcinoma of Cardiac End of Stomach and Esophagus.
Charles B. Puestow, M.D., Chicago, Illinois..... 170

MINNESOTA ACADEMY OF MEDICINE:
Meeting of October 8, 1952.................. 172
Charles D. Freeman—Memorial................. 172
Surgical Approach to Atelectasis in the Newborn.
O. S. Wyatt, M.D., T. C. Chisholm, M.D., E. Berglund, M.D., and *W. P. Eder, M.D.,* Minneapolis, Minnesota.................. 172
Synovial Sarcoma.
Stanley R. Maxeiner, M.D., F.A.C.A., F.I.C.S., and *B. H. McLaughlin, M.D.,* Minneapolis, Minnesota 174

REPORTS AND ANNOUNCEMENTS.................. 176

WOMAN'S AUXILIARY............................ 181

IN MEMORIAM............................ 182

COMMUNICATION 184

OF GENERAL INTEREST............................ 186

BOOK REVIEWS............................ 197

Contents of MINNESOTA MEDICINE copyrighted by Minnesota State Medical Association, 1953

Entered at the Post Office in Saint Paul as second class mail matter. Accepted for mailing at the special rate of postage provided for in Section 1103. Act of October 3, 1917, authorized July 13, 1918.

MINNESOTA MEDICINE

Official Journal of the Minnesota State Medical Association

Published by the Association under the direction of its Editing and Publishing Committee

Office of Minnesota State Medical Association,
496 Lowry Medical Arts Bldg., Saint Paul 2, Minnesota.

EDITING AND PUBLISHING COMMITTEE

E. M. Hammes, Saint Paul
Philip F. Donohue, Saint Paul
L. M. Eaton, Rochester
J. J. Heimark, Fairmont
C. L. Oppegaard, Crookston
T. A. Peppard, Minneapolis
H. A. Roust, Montevideo
O. W. Rowe, Duluth
Henry L. Ulrich, Minneapolis
A. H. Wells, Duluth

EDITORIAL STAFF

Carl B. Drake, Saint Paul, Editor
George Earl, Saint Paul, Associate Editor
Henry L. Ulrich, Minneapolis, Associate Editor

BUSINESS MANAGER

J. R. Bruce

Annual Subscription—$3.00. Single Copies—$0.40. Foreign and Canadian Subscriptions—$3.50.

The right is reserved to reject material submitted for editorial or advertising columns. The Editing and Publishing Committee does not hold itself responsible for views expressed either in editorials or other articles when signed by the author.

Classified advertising—ten cents a word; minimum charge, $2.00; key number, 25c additional. Remittance should accompany order.

Display advertising rates on request.

Address all communications concerning the journal to Minnesota Medicine, 2642 University Avenue, Saint Paul 14, Minnesota. Telephone Nestor 2641.

A MODERN PRIVATE SANITARIUM

for the Diagnosis, Care and Treatment of Nervous and Mental Disorders

MAIN BUILDING—One of 8 Units in "Cottage Plan"

ST. CROIXDALE ON LAKE ST. CROIX

PRESCOTT, WISCONSIN

Located on beautiful Lake St. Croix, 18 miles from the Twin Cities, it has the advantages of both City and Country. Every facility for treatment provided, including recreational activities and occupational-therapy under trained personnel. Close personal supervision given patients, and modern methods of therapy employed. Inspection and cooperation by reputable physicians invited. Rates very reasonable. Illustrated folder on request.

Prescott Office
Prescott, Wisconsin
Howard J. Laney, M.D.
Tel. 39 and Res., 76

Consulting Neuro-Psychiatrists
Hewitt B. Hannah, M.D., Andrew J. Leemhuis, M.D.
511 Medical Arts Bldg., Tel. MAin 1357, Minneapolis, Minn.

Superintendent
Ella M. Leseman
Prescott, Wisconsin
Tel. 69

tHis is A Miserable Look'ing həad

HERE
LIES
PRINTER
JONES

If it's the printer's fault he ought to be shot.

But looking at it from another angle perhaps it points to a moral.

Maybe it is like a lot of businesses where all the stress is on selling . . . and the collection of accounts, so necessary for sound progress, takes a back seat.

Are your affairs run along these lines . . . with volume the goal and collections secondary? If it is then you need to change your policy.

TO CHANGE YOUR POLICY USE THE PROFESSIONAL CREDIT PROTECTIVE BUREAU

The Professional Credit Protective Bureau is collecting hundreds of past due accounts for dental and medical men.

The Professional Credit Protective Bureau is one collection organization that sees that the patient pays direct to the supplier of medical services. In other words you PAY THE COLLECTION ORGANIZATION AFTER YOUR PATIENT HAS PAID YOU and neither you nor the debtor is embarrassed.

More than 50 leading trade associations . . . including many medical and dental organizations . . . are using this service as part of their service to members.

It will pay you to investigate this tried and true system. Use the attached coupon.

Professional Credit Protective Bureau
724 Metropolitan Bldg., Dept. MM 2-53
Minneapolis 1, Minn.
Please send me full details on the operation of your collection service.

Name ....

Address ....

City .... State ....

Division of
The I.C. System
724 Metropolitan Bldg.
Minneapolis 1, Minn.

Thank Yo

This is a personal note to all of you who have been so kind in expressing your confidence in this Agency. It is sincerely appreciated especially when we do try to merit the cooperation of your grand Association.

Since our special plan of disability insurance was first made available to the State membership, we have had many opportunities to test the worth of the plan itself as well as its administration, and believe that neither have been found wanting. Fortunately, the same can be said in connection with the experience of the thousands who are members of the other organizations listed which have endorsed and recommended the same special plan for their members. We believe that the length as well as the type of organizations in that list bears mute testimony to the value of this plan. It, in effect, vindicates the decision taken to make this available to your membership in 1947.

Your confidence in this Agency is a great source of encouragement.

CR
AGENCY
Minneapolis

CASWELL-ROSS AGENCY

1177 N. W. Bank Building
Minneapolis 2, Minnesota
Minneapolis—MA 2585
St. Paul—ZE 2341

Sincerely

INSURORS TO

Minnesota State Bar Association
Minnesota State Dental Association
Minnesota Society of C.P.A.
Minnesota State Pharmaceutical Assn.
Minnesota Auto Dealers Association
Minnesota Federation of Engineers' Societies
Minnesota State Veterinary Medical Society
Hennepin County Medical Society
Hennepin County Bar Association
11th Judicial Bar Association
Minneapolis Association of Life Underwriters

Ramsey County Medical Society
Ramsey County Bar Association
St. Paul District Dental Society
Minneapolis District Dental Society
St. Cloud Dental and Stearns County Medical Society
Duluth District Dental Society
East Central Minnesota Medical Society
St. Louis County Medical Society
West Central District Dental Society
Northwest Proprietors Association
St. Paul Life Underwriters, Inc.

HOW TO INCREASE THE PROTEIN INTAKE

without Patient Resistance

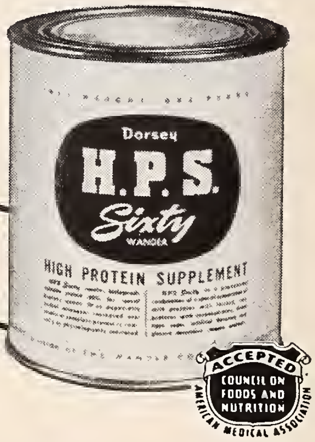
Patient resistance is rarely encountered when **H.P.S.** *Sixty* is prescribed to increase protein alimentation. This high protein supplement was carefully formulated to insure taste acceptance even when regular feedings are refused. Prepared with water or milk, it makes a universally acceptable beverage of bland taste, not unlike that of a milk shake.

60% PROTEIN in readily digested form

Consisting of intact proteins derived from milk, soybeans, and egg, **H.P.S.** *Sixty* provides 60 per cent protein and 27 per cent carbohydrate. Three servings prepared with milk provide 95 Gm. of readily digested, biologically complete protein. Prepared with water, 3 servings provide 77 Gm. of protein. **H.P.S.** *Sixty* is indicated whenever the protein intake must be sharply increased: pre- and postoperatively, to correct nitrogen loss following burns and hemorrhage, and in hepatitis, hepatic cirrhosis, malnutrition, pregnancy and lactation, and nephrosis.

H.P.S. *Sixty*®

Supplied in 1 lb. and 4 lb. tins

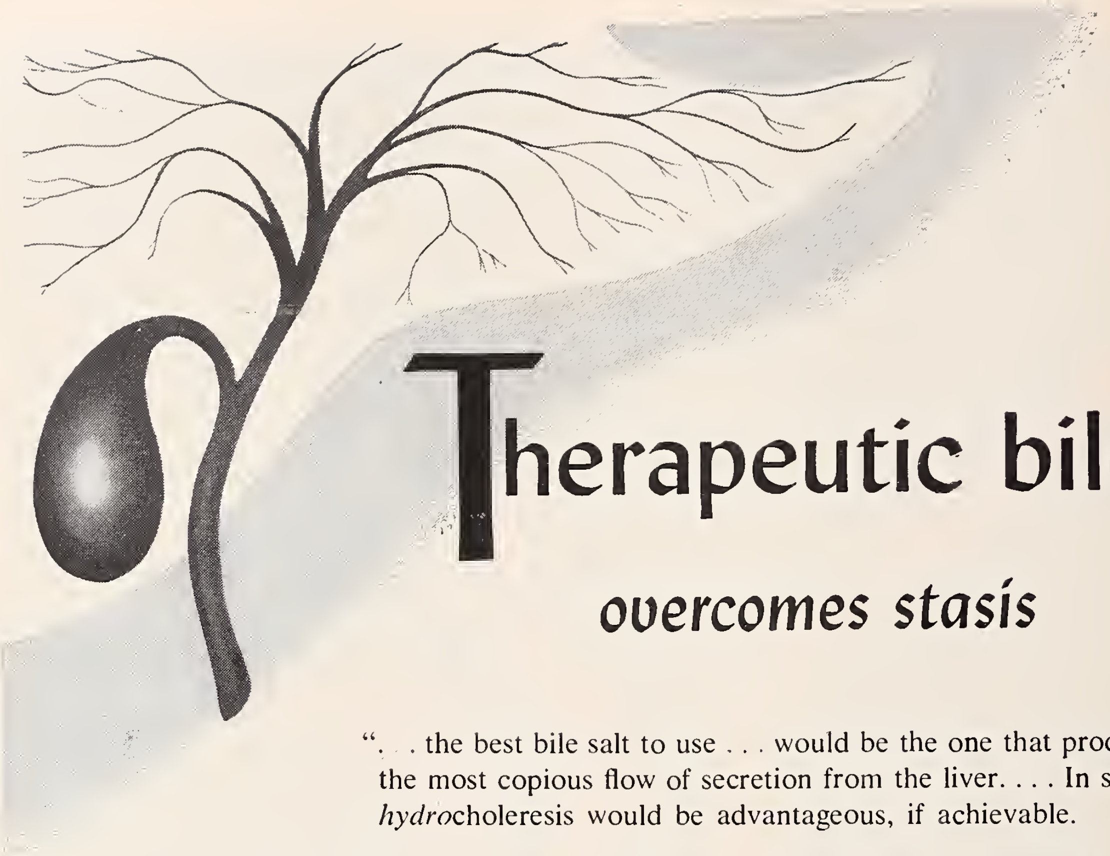


SMITH-DORSEY • Lincoln, Nebraska • *A Division of THE WANDER COMPANY*

teaspoon dosage
good taste
effective therapy
Supplies 250 mg. of pure crystalline Terramycin in each palatable and convenient teaspoonful — unexcelled for patients young and old.
CRYSTALLINE
Terramycin*
oral suspension
(FLAVORED)
Pfizer

*BRAND OF OXYTETRACYCLINE, AMPHOTERIC

DON'T MISS Spectrum APPEARING REGULARLY IN THE J. A. M. A.



Therapeutic bile

overcomes stasis

"... the best bile salt to use ... would be the one that produced the most copious flow of secretion from the liver. ... In short, *hydro*choleresis would be advantageous, if achievable.

"It is. The preparation, dehydrocholic acid, commercially available as Decholin ... does considerably increase the volume output of a bile of relatively high water content and low viscosity. The drug is not a cholagogue, i.e., it does not promote evacuation of the gallbladder, but it is a good 'flusher'."*

Decholin®

dehydrocholic acid, Ames

*Hydro*choleresis with *Decholin* produces abundant, thin, free-flowing bile—"therapeutic bile." This flushes thickened bile, mucus plugs and debris from the biliary tract.

Decholin Tablets, 3¾ gr. (0.25 Gm.), bottles of 100, 500, 1000 and 5000.

Decholin Sodium (sodium dehydrocholate, *Ames*) 20% aqueous solution, ampuls of 3 cc., 5 cc., and 10 cc.

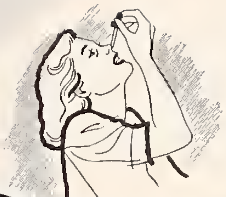
*Beckman, H.: Pharmacology in Clinical Practice, Philadelphia, W. B. Saunders Company, 1952, p. 361.

Decholin and *Decholin Sodium*, trademarks reg.

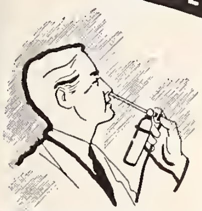
AMES
COMPANY, INC., ELKHART, INDIANA
Ames Company of Canada, Ltd., Toronto

46753

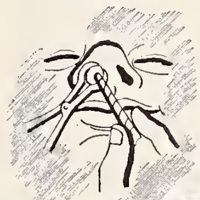
In Colds... Sinusitis



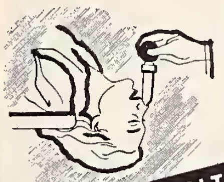
BY DROPPER...



SPRAY...



TAMPON...



DISPLACEMENT...

Neo-Synephrine hydrochloride is widely preferred as a decongestant in all stages of the common cold, sinusitis and allergic rhinitis because of its rapid and sustained action, virtual absence of sting, lack of appreciable interference with ciliary activity, virtual absence of congestive rebound and undiminished effectiveness on repeated use.

As to use of nose drops or sprays, I have about come to the conclusion that Neo-Synephrine is one of the best for all purposes.[1]

"... will produce exceedingly rapid and prolonged results."[2] "... action is sustained for two hours or more."[3]

ACCEPTED COUNCIL ON PHARMACY AND CHEMISTRY AMERICAN MEDICAL ASSOCIATION

Prompt and Prolonged Nasal Decongestion

Neo-Synephrine®

HYDROCHLORIDE

¼% solution (plain and *aromatic*), 1 oz. bottles
½ and 1% solutions (when stronger vasoconstrictive action is needed), 1 oz. bottles
½% water soluble jelly, ⅝ oz. tubes

Winthrop-Stearns INC.
NEW YORK 18, N. Y. WINDSOR, ONT.

Neo-Synephrine, trademark reg. U.S. & Canada, brand of phenylephrine

---

1. Warren, William C., Jr.: *South. Med. Jour.*, 44:449, May, 1951.
2. Voorhees, Darrell G.: *Ann. Otol. Rhin. & Laryng.*, 60:92, Mar., 1951.
3. Kelley, Samuel F.: In Gold, Harry, et al.: Cornell Conferences on Therapy. New York, Macmillan Co., 1947, vol. 2, p. 156.

"PREMARIN"®

Highly effective · Well tolerated · Imparts a feeling of well-being

"PREMARIN"

PREMARIN

Thousands of physicians prefer "Premarin" for the treatment of the menopause.

"PREMARIN"

Estrogenic Substances (water-soluble)

"PREMARIN"

ACCEPTED COUNCIL ON PHARMACY AND CHEMISTRY AMERICAN MEDICAL ASSOCIATION

also known as Conjugated Estrogens (equine)

"PREMARIN"

5210

Ayerst®

AYERST, McKENNA & HARRISON Limited · New York, N. Y. · Montreal, Canada

SULFACETAMIDE

SULFADIAZINE

SULFAMERAZINE

the "extra advantage"
in this triple sulfonamide is
sulfacetamide

TRICOMBISUL® (acet-dia-mer-sulfonamides-Schering) provides not only sulfadiazine and sulfamerazine — standard components of almost all triple sulfonamide mixtures — but also sulf*acetamide.*

Sulfacetamide brings to the combination extremely high solubility, high bacteriostatic activity, and greater safety for the urinary tract.

TRICOMBISUL

Schering CORPORATION • BLOOMFIELD, N. J.

TRICOMBISUL

Schering
TRICOMBISUL
SULFA

THEY'D BE THREE-DEEP IN THE DINER

. . . all the patients who represent the 44 uses for short-acting NEMBUTAL

Case after case from the 593 published reports shows that adjusted doses of short-acting Nembutal can produce any desired degree of cerebral depression—from mild sedation to deep hypnosis.

And with only about half the dosage of many other barbiturates.

Your margin of safety is wide and the duration of effect short. And, since the drug is quickly and completely destroyed in the body, there is little tendency toward cumulative effect or barbiturate hangover.

If you'd like to expand your experience with short-acting Nembutal, write for your copy of the booklet, "*44 Clinical Uses for* Nembutal." Just address a card to Abbott Laboratories, North Chicago, Illinois.

Abbott

In equal oral doses, no other barbiturate combines
QUICKER, BRIEFER, MORE PROFOUND EFFECT than

Nembutal®
(PENTOBARBITAL, ABBOTT)

FOR BRIEF AND PROFOUND HYPNOSIS

try the 0.1 Gm. (1½-gr.) NEMBUTAL Sodium capsule

1-76

Cordelia

AWARD WINNING BRASSIERES!

Cordelia surgical brassieres have won the Blue Ribbon for five consecutive years. Now, Cordelia has won BOTH the GOLD MEDAL and BLUE RIBBON AWARDS at the 1952 California State Fair Fashion Exhibit.

When she asks...

HERE ARE THE FACTS!

Most corrective, surgical and maternity brassiere problems have been scientifically solved by the staff of Physiospecialists at Cordelia of Hollywood.

THE GOLD MEDAL WINNER!

Each Cordelia brassiere is planned and made for easy, individual fittings by experts in local stores.

THE BLUE RIBBON WINNER!

Every Cordelia brassiere is a luxury in fashion fabrics — beautifully, youthfully designed. These are the facts judges took into consideration — then awarded *Cordelia the winner!*

Prescribe

3107 Beverly Blvd.
Los Angeles, Calif.
DUnkirk 3-1365

Cordelia ®

California's leading creator and manufacturer of scientifically designed surgical, corrective, maternity and style brassieres.

ACCEPTED FOR ADVERTISING IN PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION

OF HOLLYWOOD BRASSIERES
Originators of the famous "Control-Lift" design

"Control Lift" Brassieres Available at These Stores

Duluth — The Silhouette Shop, c/o Albenberg's

Elk River—Barsness Variety

Hibbing—Corbett Corset Shop

Lamberton—Kluegel Dry Goods Dept.

Mankato—L. Salet & Son

Minneapolis—
  Angela's St. Louis Pk.
  The Dayton Co.
  Katherine K Corset Shop
  Shirley's Maternity Fashions

Rochester—
  C. F. Massey Co.
  Peggy's Uniform Shop

Saint Paul—
  The Golden Rule

Virginia—Jarmin's, Inc.

Meat...

and the Therapeutic Value of Adequate Protein

Much evidence can be cited in favor of a high protein intake after surgery, trauma, infection, or burns. In supporting the many anabolic and defense mechanisms of the organism in physiologic stress,[1] high-quality protein—such as that of meat—assumes the status of an important therapeutic agent.[2]

Phagocytic activity,[3] formation of antibodies,[4] and rapid healing of wounds[5] are favorably affected by ample protein nutrition. Remission of peptic ulcer,[6] improved resistance to infectious disease,[4] and maintenance of plasma proteins after surgery[7] are other therapeutic effects attributed to an ample protein intake. In the management of ulcerative colitis, protein represents a primary need.[8] Recent advances in the treatment of extensive burns and of hepatic disease emphasize the value of high protein feedings.[9]

These experimental and clinical findings establish the therapeutic value of high protein intake.[10] To assure therapeutic protein adequacy, the dietary should provide a liberal margin of protein over normal requirements.

Meat is an important source of high-quality protein, containing essential as well as nonessential amino acids. In addition, it supplies significant amounts of B group vitamins and of iron, phosphorus, and other needed minerals.

REFERENCES

1. Ravdin, I. S., and Gimbel, N. S.: Protein Metabolism in Surgical Patients, J.A.M.A. *144*:979 (Nov. 18) 1950.
2. Mann, G. V., and Stare, F. J.: Nutritional Needs in Illness and Disease, in Handbook of Nutrition, American Medical Association, New York, The Blakiston Company, 1951, chap. 17.
3. Mills, C. A., and Cottingham, E.: Phagocytic Activity as Affected by Protein Intake in Heat and Cold, J. Immunol. *47*:503 (Dec.) 1943.
4. Cannon, P. R.: The Importance of Proteins in Resistance to Infection, J.A.M.A. *128*:360 (June 2) 1945.
5. Harvey, S. C., and Howes, E. L.: Effect of High Protein Diet on the Velocity of Growth of Fibroblasts in the Healing Wound, Ann. Surg. *91*:641 (May) 1930.
6. Co Tui, et al.: Hyperalimentation Treatment of Peptic Ulcer with Amino Acids and Dextri-Maltose, Gastroenterology 5:5 (July) 1945.
7. Lund, C. C., and Levenson, S. M.: Protein in Surgery, J.A.M.A. *128*:95 (May 12) 1945.
8. Welsh, C. S.; Adams, M., and Wakefield, E. G.: Metabolic Studies on Chronic Ulcerative Colitis, J. Clin. Investigation *16*:161 (Jan.) 1937.
9. Cannon, P. R., et al.: Recent Advances in Nutrition with Reference to Protein Metabolism, Lawrence, Kansas, University of Kansas Press, 1950.
10. McLester, J. S., and Darby, W. J.: Nutrition and Diet in Health and Disease, ed. 6, Philadelphia, W. B. Saunders Company, 1952, p. 19.

The Seal of Acceptance denotes that the nutritional statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

American Meat Institute
Main Office, Chicago...Members Throughout the United States

a broad spectrum dietary supplement

When anorexia interferes with the intake of needed foods in adequate amounts, the resultant effect on the nutritional status of the patient is considerably more apt to involve deficiency in several nutrients than in one particular nutrient. In consequence, unpredictable subclinical deficiency states may arise, which can seriously impede convalescence. Hence when anorexia is present, it is good prophylactic therapy to prescribe a dietary supplement of broad nutrient spectrum, capable of improving the intake of virtually all indispensable nutrients.

The dietary supplement Ovaltine in milk enjoys long-established usage in clinical practice. As is evident from the appended table, it supplies notable amounts of virtually all nutrients known to take part in metabolism. Its biologically complete protein provides an abundance of all the essential amino acids. It is delightfully palatable, easily digested, bland, and well tolerated.

Ovaltine is available in two varieties, plain and chocolate flavored, giving choice according to preference. Serving for serving, both varieties are virtually alike in their wealth of nutrients.

THE WANDER COMPANY, 360 N. MICHIGAN AVE., CHICAGO 1, ILL.

Ovaltine

Three Servings of Ovaltine in Milk Recommended for Daily Use Provide the Following Amounts of Nutrients

(Each serving made of ½ oz. of Ovaltine and 8 fl. oz. of whole milk)

MINERALS		VITAMINS	
*CALCIUM	1.12 Gm.	*ASCORBIC ACID	37 mg.
CHLORINE	900 mg.	BIOTIN	0.03 mg.
COBALT	0.006 mg.	CHOLINE	200 mg.
*COPPER	0.7 mg.	FOLIC ACID	0.05 mg.
FLUORINE	3.0 mg.	*NIACIN	6.7 mg.
*IODINE	0.15 mg.	PANTOTHENIC ACID	3.0 mg.
*IRON	12 mg.	PYRIDOXINE	0.6 mg.
MAGNESIUM	120 mg.	*RIBOFLAVIN	2.0 mg.
MANGANESE	0.4 mg.	*THIAMINE	1.2 mg.
*PHOSPHORUS	940 mg.	*VITAMIN A	3200 I.U.
POTASSIUM	1300 mg.	VITAMIN B_{12}	0.005 mg.
SODIUM	560 mg.	*VITAMIN D	420 I.U.
ZINC	2.6 mg.		

*PROTEIN (biologically complete)	32 Gm.
*CARBOHYDRATE	65 Gm.
*LIPIDS	30 Gm.

*Nutrients for which daily dietary allowances are recommended by the National Research Council.

AQUASOL
VITAMIN A
DROPS

**aqueous
vitamin A**

THE **FIRST** AND **ORIGINAL** ACCEPTED COUNCIL ON PHARMACY AND CHEMISTRY AMERICAN MEDICAL ASSOCIATION ACCEPTED BY THE COUNCIL

AQUASOL VITAMIN A DROPS

**Aquasol Vitamin A Drops provides
50,000 U. S. P. units of natural vitamin A
per gram in aqueous solution.**

Aqueous solutions of vitamin A . . . as available in Aquasol Vitamin A Drops . . . are more rapidly absorbed than vitamin A in oil solutions. [1-8]

It is suggested in patients with dysfunctions of the liver, pancreas, and biliary tract which interfere with utilization of fats; in celiac disease and certain other diarrheal states. [1,4,8]

The Research Laboratories of U. S. Vitamin Corporation in 1943 pioneered and developed the making of aqueous solutions of lipo-soluble vitamins . . . now protected by U. S. Patent No. 2,417,299.

Samples available upon request.

u. s. vitamin corporation

casimir funk labs., inc. (affiliate)
250 E. 43rd St., New York 17, N. Y.

1. Lewis, J. M., et al.: Jl. Pediatrics 31:496, 1947
2. Kramer, B., et al.: Am. Jl. Dis. Child. 73:543, 1947
3. Halpern, G. R., et al.: Science 106:40, 1947
4. Nutrition Reviews 5:286, 1947
5. Clifford, S. H. and Weller, K. H.: Pediatrics 1:505, 1948
6. Popper, H., et al.: Gastroenterology 10:987, 1948
7. Davidson, D. M., et al.: Jl. Invest. Derm. 12:221, 1949
8. Nutrition Reviews 6:248, 1948

Number 2 of a series on the human meaning of great discoveries

THE DIFFICULTY OF KNOWING NOTHING

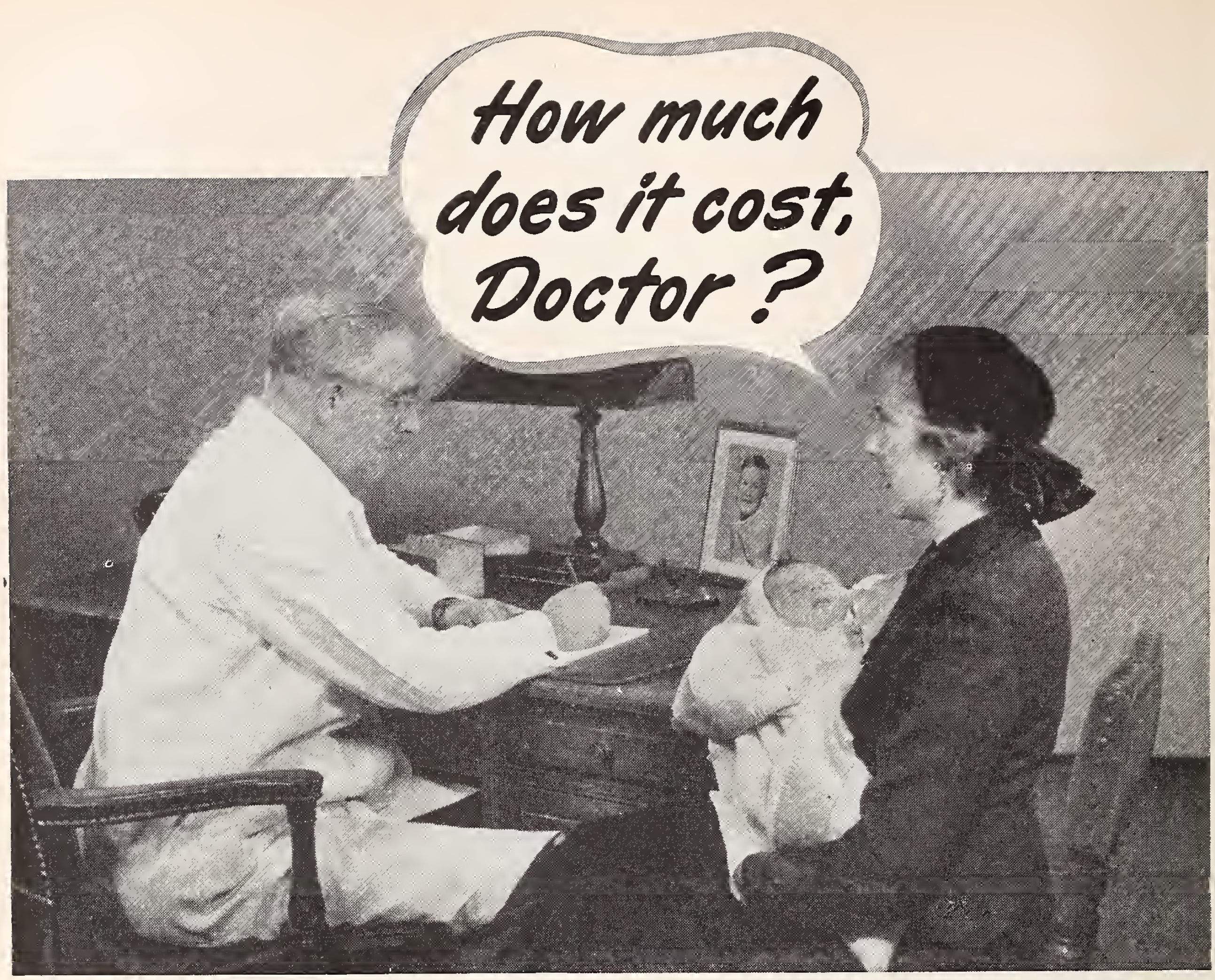
We may say that early man knew almost nothing. But nothing is just what early man could not know. The knowledge of nothing came hard and late in the progress of civilization. Plato and Aristotle, and even the great mathematician Euclid, calculated without a zero. With all that they knew, they did not know nothing. Bagdad of the Arabian Nights was the birthplace of the zero. The brawling bazaars of a great commercial city demanded swift accurate accounting, and the Arabian mathematician, al-Kwarizimi, met the need. Humanity's long journey out of darkness begins anew for each child opening his eyes to the light, seeking and discovering, finding answers to living needs. Science serves these needs from the moment of birth, even before birth.

General Pharmacal Corporation, Los Angeles, California

Q TEST

General Pharmacal Corporation is the creator of Q-Test, the one-hour office screening test for pregnancy. Sold only to physicians through ethical channels.

Exclusive Distributors: Q-Test Distributors of Minneapolis, 5921 Dupont Avenue South


How much does it cost, Doctor?

WHEN prescribing an infant feeding formula, you have doubtless often been asked by the mother, "Is it expensive?"

For most families—especially those with children—today's dollar doesn't stretch far. Hence the anxiety of mothers concerning cost.

BAKER'S
MODIFIED MILK
Powder form
Liquid form
For the Bottle-fed Baby
THE BAKER LABORATORIES

POWDER and LIQUID

Made from Grade A milk (U. S. Public Health Service Milk Code) which has been modified by replacement of the milk fat with animal and vegetable oils and by the addition of carbohydrates, vitamins and iron.

Sold at an extremely low price, Baker's provides a relatively high protein content (an ample supply of essential amino acids), four sugars, added iron and adequate amounts of vitamins A, D, thiamine, niacin and riboflavin. With Baker's, there's no need to prescribe additional vitamins (except C).

Yet the average cost of feeding most infants on Baker's is only about $1.50 per week. An economical answer to the question, "How much does it cost, doctor?"

BAKER'S MODIFIED MILK

THE BAKER LABORATORIES INC.

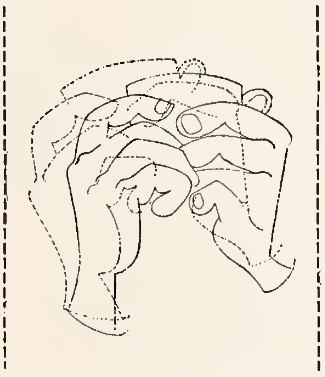
Main Office: Cleveland, Ohio
Plant: East Troy, Wisconsin

Division Offices: Atlanta, Dallas, Denver,
Greensboro, N. C., Los Angeles, San Francisco, Seattle

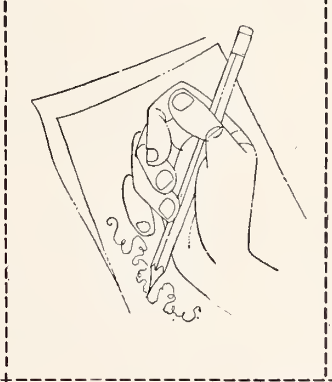
ACCEPTED
COUNCIL ON FOODS AND NUTRITION
AMERICAN MEDICAL ASSOCIATION

new uniform oral dosage

in muscle spasm of
rheumatic disorders



in acute
alcoholism



in certain
neurologic disorders

The new, uniform oral dose for adults is 1-3 grams. This may be repeated 3-5 times per day.

The first dose prescribed should be at the lower end of the recommended dosage range *(an occasional patient may complain of side effects when* large *doses are given at the* start *of Tolserol therapy).* Subsequent doses may be adjusted to the needs of the individual patient. Whenever possible, Tolserol should be given after meals. When Tolserol is given between meals, it is desirable that the patient first drink 1/3 glass of milk or fruit juice.

Tolserol

Squibb Mephenesin

Tablets, 0.5 Gm. and 0.25 Gm., bottles of 100; *Capsules,* 0.25 Gm., bottles of 100; *Elixir,* 0.1 Gm. per cc., pint bottles; *Intravenous Solution,* 20 mg. per cc., 50 cc. and 100 cc. ampuls.

'TOLSEROL' (REG. U. S. PAT. OFF.) IS A TRADEMARK OF E. R. SQUIBB & SONS

SQUIBB

NOTES: CONSTIPATION

WHAT BULK-PRODUCING PRODUCT IS EFFECTIVE FOR BOTH SIMPLE AND INTRACTABLE CASES?

Simple constipation

Many physicians report excellent results in the treatment of ordinary constipation with Hydrocil. Hydrocil absorbs liquids with unusual efficiency, creating 35 times its own weight of moist, lubricating bulk. Patients find Hydrocil pleasant and easy to take, too.

Intractable constipation

When mild bowel stimulation is desired in addition to effective bulk therapy, Hydrocil Fortified is recommended. To supplement its bulk-producing ingredients, Hydrocil Fortified contains acetphenolisatin, a newly-developed synthesis of the laxative principle in prunes.

This gentle, persuasive laxative has proved highly successful in correcting intractable constipation and preventing impactions after anorectal surgery.

How supplied

Hydrocil Fortified (blue label) and Hydrocil Regular (brown label) are provided in 4-oz. and 1-lb. canisters. A supply of Hydrocil for trial will be sent you upon written request. Address: Dept. M1, Fuller Pharmaceutical Company, 715 So. 10th St., Minneapolis 4, Minn.

ONE POUND
Hydrocil
Fuller
ONE POUND
Hydrocil
FORTIFIED
Fuller
Hydrocil
Fuller
FORTIFIED Hydrocil
Fuller

Hydrocil *Fortified • Hydrocil Regular • Benadex Benzocones • Tucks • products of . . .*

fuller
PHARMACEUTICAL COMPANY

"...and be sure to take your VITAMINS!"

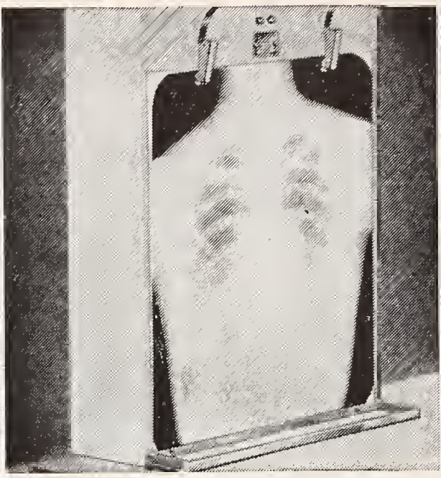
When the management of heart disease requires caloric or salt restriction, vitamin intake may be decreased because of unpalatability or inadequate volume of food. A balanced vitamin preparation offers a dependable method for guarding against such an eventuality.

MERCK & CO., INC., RAHWAY, N. J.—as a pioneer manufacturer of Vitamins—serves the Medical Profession through the Pharmaceutical Industry.

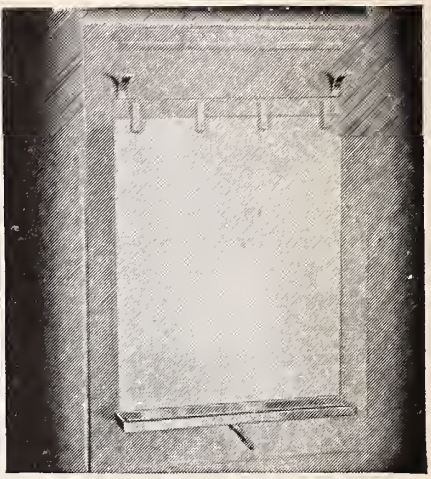
©Merck & Co., Inc.

There's a GE viewer just right for you!

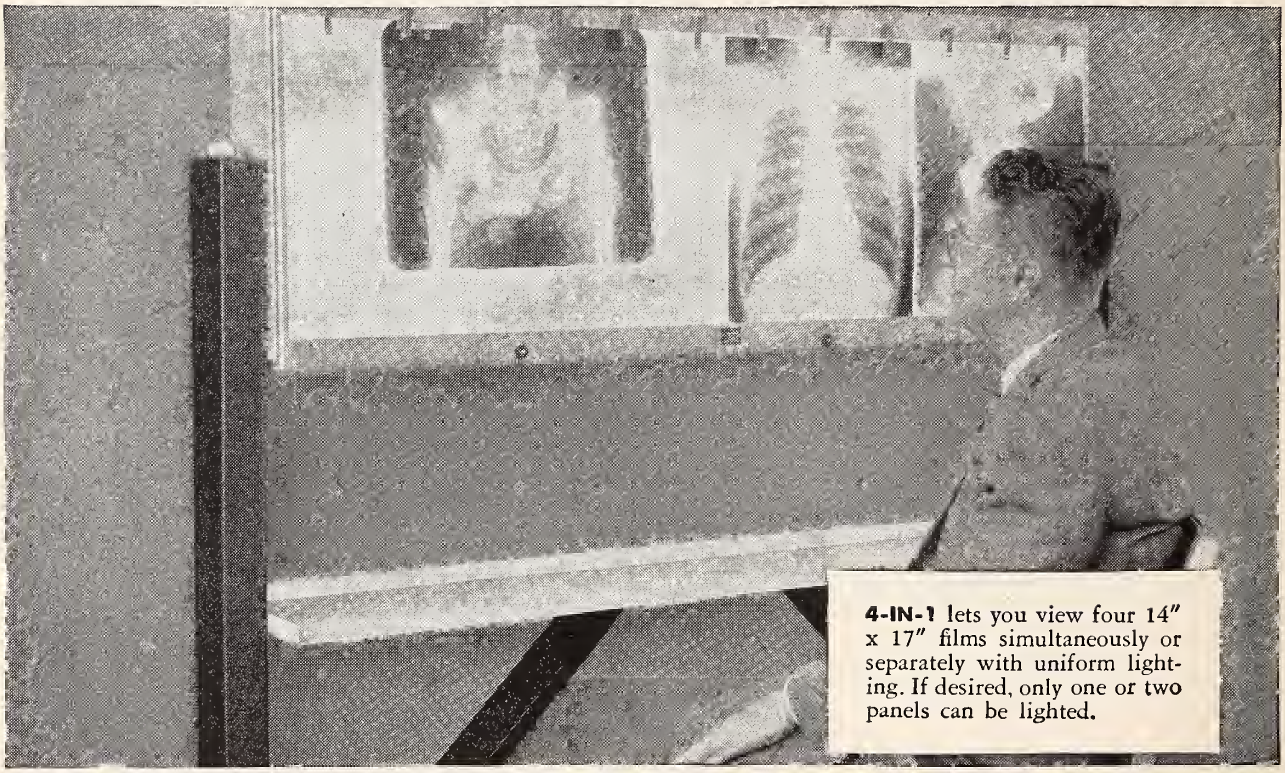
CIRCLINE — the best illuminator for general use. Named for the famous GE Circline Lamp that furnishes its top-notch, uniform illumination.



DUOLINE — a lighter, less expensive unit, yet with excellent illumination from two straight General Electric fluorescent lamps.



EXPLOSION-PROOF for operating rooms. Stainless steel throughout and, like the other GE illuminators shown, U/L approved.



4-IN-1 lets you view four 14″ x 17″ films simultaneously or separately with uniform lighting. If desired, only one or two panels can be lighted.

Yes, GE builds illuminators of every type. In addition to the four shown here, you can choose from 70 mm single-frame and stereo viewers . . . 4″ x 5″ and 4″ x 10″ single and orthostereoscopic viewers . . . GE High-Intensity viewers . . . dental viewers. For complete information, see your nearest GE x-ray representative, or write

You can put your confidence in —

GENERAL ELECTRIC

Direct Factory Branches:
MINNEAPOLIS — 808 Nicollet Avenue
DULUTH — 3006 W. First Street

Resident Representatives:
DETROIT LAKES — Eric Nelson, North Shore Dr.
MANKATO — J. F. Van Osdell, 123 Blue Earth
ST. PAUL — R. H. Holen, 153 W. Robie
SIOUX FALLS — H. L. Norlin, 1908 S. Sixth Avenue

Upjohn

absorbable
hemostat:

Gelfoam

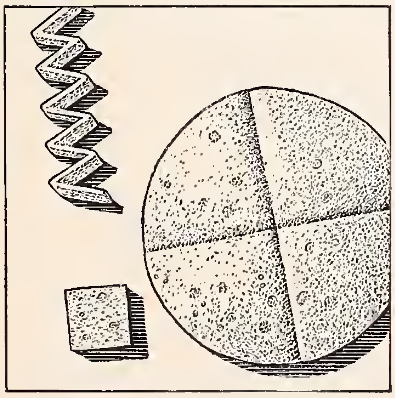
ACCEPTED
COUNCIL ON
PHARMACY
AND
CHEMISTRY
AMERICAN MEDICAL ASSOCIATION

Trademark Reg. U.S. Pat. Off. BRAND OF ABSORBABLE GELATIN SPONGE

Available in a large variety of sizes and forms, including:

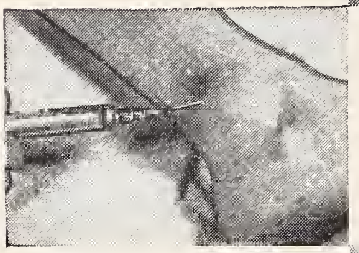
Surgical sponges
Compressed surgical sponges
Dental packs
Gynecologic packs
Nasal packs
Prostatectomy cones
Tumor diagnosis kit

The Upjohn Company, Kalamazoo, Michigan

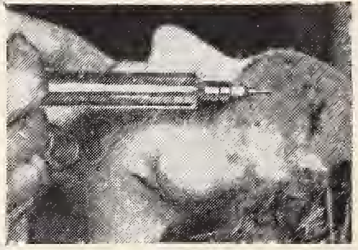


WYDASE HAS MANY IMPORTANT ADVANTAGES IN EVERYDAY MEDICAL PRACTICE

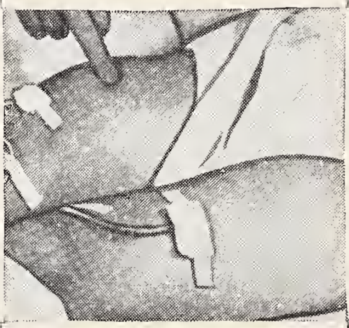
REDUCTION OF SIMPLE FRACTURES



TREATMENT OF SPRAINS

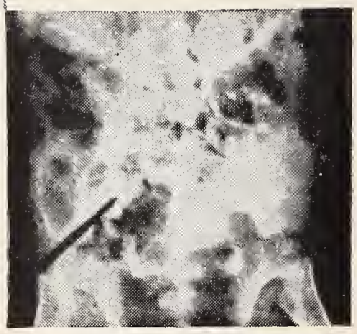


REDUCTION OF HEMATOMAS



HYPODERMOCLYSES

LOCAL ANESTHESIA



HYPODERMAL INJECTION OF CONTRAST MEDIA

Wydase softens tissue hyaluronic acid. This spreads *injected solutions* and *accumulations* of transudates and blood, facilitating their absorption.

Supplied: Vials of 150 and 1500 TR (turbidity-reducing) units.

Wyeth®

Lyophilized

Wydase®

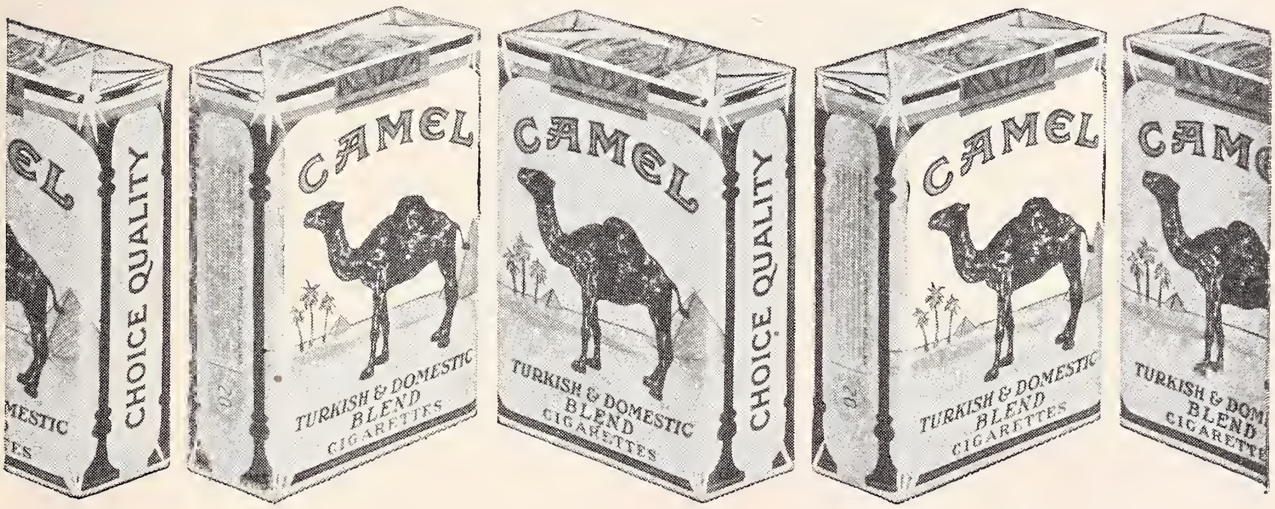
Hyaluronidase

ACCEPTED COUNCIL ON PHARMACY AND CHEMISTRY AMERICAN MEDICAL ASSOCIATION

Important Note: Wydase is now Council-accepted for use in management of renal lithiasis

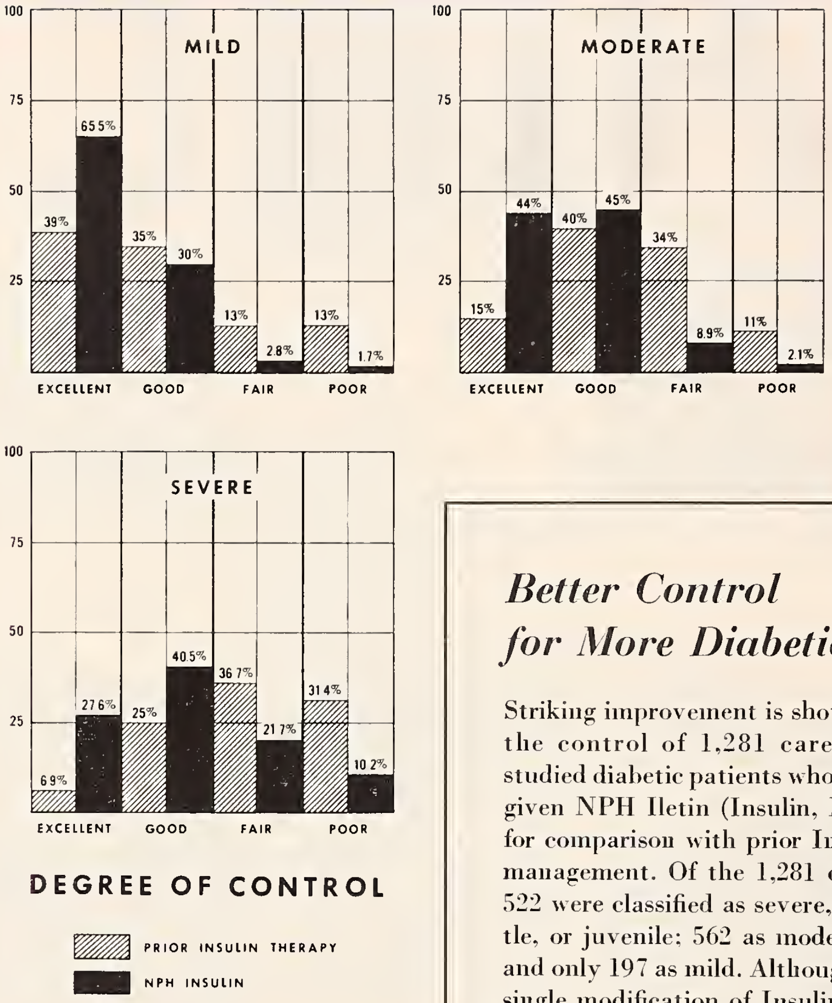
CAMEL

Mild, Flavorful


CAMEL
CHOICE QUALITY
TURKISH & DOMESTIC BLEND CIGARETTES

Pack after pack!

AMERICA'S MOST POPULAR CIGARETTE



Lilly

Better Control for More Diabetics

Striking improvement is shown in the control of 1,281 carefully studied diabetic patients who were given NPH Iletin (Insulin, Lilly) for comparison with prior Insulin management. Of the 1,281 cases, 522 were classified as severe, brittle, or juvenile; 562 as moderate; and only 197 as mild. Although no single modification of Insulin can be expected to meet all the requirements for all patients, results with NPH Insulin appear to be as good as, or often far better than, those obtained by other means.

Graphs reproduced from *Diabetes*, 1:4, p. 293.

Eli Lilly and Company
Indianapolis 6, Indiana, U.S.A.

Simplify diabetic management through improved time action, fewer injections with

NPH Iletin (Insulin, Lilly)

Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 36 February, 1953 Number 2

INSIDE THE BRITISH HEALTH PLAN

JAMES ROGERS FOX, M.D.
Minneapolis, Minnesota

PERHAPS it has not occurred to you that the practice of medicine in your own state is the optimum; that through all the trials and tribulations of patients, hospitals (or the lack of them), insurance, government forms and the like, your mode of practicing is not surpassed. Most of us have compared our brand of medicine and surgery here with other locales in the country and have come back to encourage some changes, but with the feeling that no other area is better. We are leaders in tuberculosis control, venereal disease control, child and maternity welfare and in the general approach to health. This point has been driven home to me more so since returning from Great Britain where I was fortunate enough to enter into their nationalized scheme. This arose from the fact that I was appointed a member of the visiting faculty at the University of Edinburgh which permitted me a living view of the teaching and specialties. On the other hand I was made a member of the British Medical Council Registry and as such saw patients on the basis of a general practitioner. This double situation permitted me the opportunity of studying and experiencing medicine in Britain with resultant impressions and comparisons with the United States. I shall limit my comments to those experiences in Britain, although my brief observations in other European countries suggested little better solutions of medical care.

To begin with, one cannot compare the United States and Britain. The traditions in Britain are more important to them than efficiency, and there is pride in this.

In addition there is one state the size of Minnesota, with about fifty million people. Moreover, politically and in the mechanisms of medicine their approach is quite different from ours. This is very interesting because the results are not too dissimilar. The general practitioner generally has his office in his home and sees patients there, in their homes, or at a nursing home. The last is analogous (though much less desirable and seldom over forty beds) to the private hospital here. There are operating and obstetrical suites, but no laboratory nor x-ray. These procedures must be obtained through specialists if the general physician cannot do them himself. In addition he must supply his own instruments, gowns and the like. The hospitals are ward in nature, such as our general hospitals and are limited to use by the specialist. Thus one easily can see that the gulf between the general physician and the specialist is broad. This has been increased since the adoption of the National Health Service, for the general practitioner is paid $2.38 per head per year for up to four thousand patients whereas the specialist is given a salary for his hospital work. In addition he receives some government paid consultations over and above any that he may receive privately. Do you believe that you could see four thousand patients as often as they desire through a year? Since the change in administration, this is being dropped to thirty-five hundred, but there is still a great deal to be desired. What has happened is that the niceties of medicine have increased to the pleasure of many, but the health problem of the nation including tuberculosis, housing, and public health measures has been overlooked—a vote is too important.

Many features of the socialization scheme are not so bad as we have been led to believe, whereas others are worse. The paper work is minimal.

After the numerous service, veterans administration, and insurance forms we have thrust upon us, I fully expected to be swamped; however, such was not the case. There is but one prescription form; the physician keeps records as he desires. The new administration has found it necessary to set up nuisances in order to abate certain abuses. There is a charge of fourteen cents for each prescription and no glasses can be obtained without a general physicians' referral. As you can guess the latter merely hampers the doctor. One very undesirable feature is that a physician who in his judgment deems it unnecessary to make a call, may be reported to the local board. For the most part a patient accepts his decision, but should the patient report him, the doctor must appear before this board which is composed of lay persons. The board decides whether the physician was out of line medically.

Beds are difficult to get, especially for tuberculosis patients. At the Royal Infirmary of Edinburgh there were 1,400 patients waiting admission to this 1,500-bed hospital. However, all emergency cases were cared for immediately. The tuberculosis rate is very high; in fact it had been mounting recently. Tuberculosis beds are under a central control, as are certain medications such as aureomycin. One must show good cause for the use of either for his patient. This would be a desirable situation were it not for the fact that the human equation enters in and favoritism can spoil this control. Many patients with moderately advanced tuberculosis are ambulatory for months because of insufficient staffed beds. Public health measures beyond those for tuberculosis, such as for venereal disease, child and maternal welfare, immunization, water and milk sanitation and the like are literally a generation or more behind us, and yet the niceties are being made available. The physician does not have interference with his handling of patients beyond what I have mentioned. Patients select their doctor by signing the registry of the physician they desire until his maximum enrollment has been reached. Conceivably he could see others if they would pay directly, but where could he find the time? The physicians in general are not happy with this centralization of medicine, but now they are being paid for their endeavor. The specialist, who previously donated his time to the hospital, now receives a very adequate salary for that time in addition to his practice. However, there are many of these who dislike the philosophy of the situation and believe it is a detriment to the country—this being based on the many errors of government-run enterprises already evident.

The people who are of the paternalistic, or "I deserve it" attitude, are in full accord with the program. The rest either accept it (and apathy is evident in many) or resent it. I took the opportunity of talking at length with physicians and persons in all walks of life throughout Britain and came to the conclusion that basically we are not at all unlike. The war with its exhaustion and the postwar administration made for considerable apathy. For this reason many years were lost and paternalism was fostered.

Just how the entire program was conceived is interesting. In 1911 the panel system, whereby the government began paying physicians for caring for their patients, was instituted. For many years this included only those who earned less than four hundred pounds a year. (This was equivalent to two thousand dollars but possessed a greater buying power). The program was carefully thought out and further extensions were becoming evident. The Conservative party, not the Labor party as we all have believed, was the originator of the program and was in the process of consultation (admittedly slow) with the British Medical Association, when the Labor party through its Bevan made the program a political football and with votes in mind rather than British health, thrust it through. This was greatly enhanced by the poor co-operation of the voting conservative population. The cost was estimated in 1948, when the plan was begun, at 510 million dollars. The mechanism was to be simple and it is, for the basic plan had been in effect for thirty-seven years. However, the cost in 1951 was 1.3 billion dollars and estimated at 1.5 billion dollars for 1952. The Conservative government has set a 1.2 billion dollar limit per year thereafter. However, one can see that some of the problems are being met, but slowly. Thus, as I have been told, "when we get the rough edges off and are used to the scheme, it will not be so bad."

In general then, what has happened is that a blanket scheme has hindered the progress in Britain. If the problem had been met as needed, the overwhelming cost and rather frequent misuse would not have occurred. The people now may all see personal physicians, but this is also a disadvantage for one cannot maintain his professional level and still receive adequate remuneration. He is penalized for doing a thorough job. In addition the hospitals are full and with waiting lists. As a result the nursing homes are personal costs, which fact has stimulated personal insurance coverage. The doctor may see whom he desires and treat without interference; however I have noted the bed and drug problem. The personal pride in what were voluntary supported hospitals has left and in many places an unhappy air is evident. The plan hampers the general physician and most students now plan to be specialists. As a result rural care eventually will be difficult. But certainly the crux of the entire situation stems from the disregard of the true immediate and basic needs to institute a blanket program which even a wealthy country could not have ingested at one time.

In my discussions with the dozens of physicians throughout Britain extensive interviews were possible in sixty-six instances, which is but a cross section. All agreed that expanded medical care in Britain had been necessary, but not one was pleased with the manner in which it had been handled. There was a great deal of grumbling about the British Medical Association and its desertion of their resolutions. There were many facts to substantiate their claim that from the leaders down there was a regard only for personal security, which was a sudden departure, for many wanted to be "on the ground floor." In spite of all the difficulties, medicine at the specialist level and with these general men who have outside sources of income, is nearly as good as ours. Over and above the extension of care and niceties there are several features which are worthwhile. For example, the general physician may take two weeks a year with tuition and salary for a postgraduate course. Thus all is not so bad as we are so often told.

Just how this applies to the United States is not evident immediately. As I have stated before it is impossible to compare Great Britain and the United States for the reasons indicated. What is apparent and certainly analogous is the manner in which the program went into effect. In discussing this with local physicians I have found we have been drifting into exactly the same rut of being reticent about listening to any suggestions. Rather we, through the AMA, for years have said no to all. It became evident to me that no matter how much time we spend saying no, eventually we shall be caught in a sweep, for politics has too many emotions with too few facts. British care was not at all antiquated and restricted, but it needed adjustment just as ours needs cost adjustment. What happened in place of a concrete plan by the British Medical Association you all know.

Thus, it is my feeling that a plan must be devised in medicine to preclude any possible necessity for its becoming political. I believe that a volunteer plan of the Blue Cross type is best, but that perhaps some *local* subsidization may prove necessary, as has been the case in general hospitals. Other reasons for this include the physician's too frequent misuse of the Blue Cross, the lack of an informed populace, and the to date poor public relations job done by medicine. Fortunately there is evidence of moderate but definite progress in the last two. Obviously there will be less stumping for a nationalized plan here for the next two to four years, which fact presents the ideal breathing space for positive action and the formation of a plan to bring to the public before politicians back us to our "no" wall again. The difficulty lies in the physicians' easy course of criticism with few doctors seeing beyond their own practice in the effort of establishing a necessary policy. This can be rectified by co-operation—not the type demonstrated in the British Medical Association.

Briefly I have presented the results of my experiences, observations, and studies in Great Britain. There are numerous other phases that could well warrant elaboration, such as the mishandling of the tuberculosis problem, the meager public health measures, the relative termination of the progress in industrial medicine, the varying but not promotive effect on college health, housing, et cetera. However, the conclusions which I reached through this raft of information are included Moreover, I believe there are several ways that we could combat the Truman-Ewing political enterprise and its proponents by getting on the offensive.

Let us not, for a change, "have too little too late!"

University of Minnesota
Health Service

HEMOLYTIC ANEMIA

PAUL S. HAGEN, M.D.
Minneapolis, Minnesota

HEMOLYTIC anemia is a rather common type of anemia in our hematologic experience at the Minneapolis Veterans Administration Hospital. For example, on the medical wards we are seeing at least twenty new patients a year who have hemolytic anemia. Some of these have congenital hemolytic syndromes, but in the majority the hemolytic anemia is acquired, often secondary to another disease.

Classification

Hemolytic anemia is characterized by an excessive rate of red cell destruction so that the normal 100- to 120-day life span of the red cell is shortened. In some of these patients the average life of the red cell is only a few days.

Marking of the red cells by various tracer techniques has aided greatly in the understanding of the general processes involved in the *in vivo* destruction of red cells in the various hemolytic anemias. Heavy nitrogen, radiocarbon and radioiron are useful in studying red cell dynamics. However, the most versatile method for tracing the fate of red cells utilizes the natural agglutinogens of the red cell. This method is known as the Ashby differential agglutination technique.[1] Red cells that are compatible but serologically identifiable are transfused, and the rate of their disappearance is followed. For example, Group O cells are given to a Group A recipient. Serial blood samples are drawn, the recipient's cells removed by agglutination with anti-A serum, and the donor cells which remain freely suspended are counted. These values are plotted against time on graph paper. The resulting graph shows the pattern of disappearance of the transfused cells and from this graph the average life of the transfused red cells can usually be calculated.[4] The MN blood groups are used in a similar fashion. Cross transfusion studies are useful to determine whether a hemolytic anemia is due to faulty red cells (intrinsic defect) or whether the increased rate of red cell destruction is due to environmental (extrinsic) factors. In these studies the patient's cells are transfused and followed in a normal individual while normal cells are transfused and followed in the patient. If the patient's cells disappear rapidly in the normal while normal cells live a normal length of time in the patient it is apparent that the hemolytic anemia is due to an intrinsic defect of the cell. However, if there are extrinsic hemolytic factors present in the patient, transfused normal cells will be destroyed at an increased rate. On the basis of these differential agglutination studies the hemolytic anemias fall into two major categories:[12] I. Hemolytic anemia due to intrinsically defective red cells, and II. Hemolytic anemia due to extrinsic causes. Occasionally an anemia in group I can be complicated by some extrinsic abnormality.

Hemolytic anemias due to intrinsic defects include: 1. Hereditary spherocytosis (familial hemolytic anemia, congenital hemolytic jaundice). 2. Sickle cell anemia. 3. "Mediterranean" anemia. 4. Hereditary non-spherocytic anemia. 5. Paroxysmal nocturnal hemoglobinuria. Although pernicious anemia is not a hemolytic anemia in the usual sense, the cells are abnormally constructed and have a shortened life span.[8,10,17] The hemolytic anemias due to extrinsic factors constitute a large group caused by many different agents.

Mechanisms of Abnormal Red Cell Destruction[13]

Cells with intrinsic defects are destroyed by different mechanisms depending upon the nature of the defect of the cell. For example, the sickle cell because of certain abnormalities of its hemoglobin and cytoskeleton becomes sickled when it is exposed to low oxygen tension. This abnormal shape leads to impaction of these cells in the capillaries of various organs with subsequent hemolysis. In hereditary spherocytosis the cells

---

Presented at the Continuation Course in Allergy and Hematology, May 15-17, 1952, University of Minnesota Center for Continuation Study, Minneapolis 14, Minnesota.

From the Hematologic Sections of the Medical and Clinical Laboratory Services of the Minneapolis Veterans Administration Hospital and the Department of Medicine, University of Minnesota Medical School, Minneapolis, Minnesota.

Sponsored by the VA and published with the approval of the Chief Medical Director. The statements and conclusions published by the author are the result of his own study and do not necessarily reflect the opinion or policy of the Veterans Administration.

issuing from the bone marrow are thicker than normal.[2] It has been demonstrated in two different laboratories[5,22] that these thicker than normal cells are selectively trapped in the splenic pulp where they undergo changes leading to disintegration. It is believed[22] that the spherocytic cells are trapped because they cannot escape from the splenic pulp as easily as cells of normal thickness through slit-like openings into the venous sinusoids. Actually these hereditary spherocytic cells have been found to have an essentially normal life span when they are transfused into splenectomized individuals.[14] The chief reason for the success of splenectomy in this disease is now apparent. In "Mediterranean" anemias increased fragmentation of the abnormally constructed cells appears to be an important mechanism of early destruction.

The second group, hemolytic anemias due to extrinsic factors, are the hemolytic anemias more frequently encountered in our experience. In these syndromes, normal red cells are produced by the bone marrow but they are injured by a wide variety of agents which cause their early destruction. These extrinsic agents can injure the red cell envelope directly or they may interfere with the internal metabolism of the red cell leading to its disintegration. A number of these agents undoubtedly attack the cells in both general ways.

Septicemia with various bacteria, intracellular parasites, many drugs and chemicals, full thickness burns, certain animal and vegetable poisons have been noted to cause excessive red cell destruction. However, most of the acquired or "extrinsic" hemolytic anemias encountered are associated with immune body reactions. These are of several types. For example, there are isoagglutinins related to the various blood groups including Rh sensitivities. Cold hemagglutinins are another type of immune body reaction. These are often associated with some illness, such as primary atypical pneumonia, leukemia, or as we have recently seen, cirrhosis of the liver. "Cold" and "warm" hemolysins are other types of immune bodies demonstrable in hemolytic anemias.

"Extrinsic" types of hemolytic anemias are found at times with various primary diseases[19] and are often referred to as "symptomatic" hemolytic anemias.[16] "Symptomatic" hemolytic anemia is the most frequent type of hemolytic anemia we have seen. For example, we have found evidence of excessive red cell destruction as follows: rather frequently in patients who have lymphocytic leukemia, myelocytic leukemia, Hodgkin's disease and other lymphomas; in at least two patients with carcinomatosis involving the bone marrow; occasionally with cirrhosis of the liver; at times in primary atypical pneumonia when there is a high titer of cold hemagglutinins; infectious mononucleosis; "Felty's" syndrome (rheumatoid arthritis, leukopenia, anemia and splenomegaly); polyarteritis nodosa; in a patient who is a salmonella carrier and has a high antibody titer; and in a patient with "burned out" polycythemia vera who had leukemia and a huge spleen. Hemolytic anemia has been found with uremia, hyperthyroidism, lupus erythematosis, Boeck's sarcoid as well as other diseases. Among this group of hemolytic anemias due to extrinsic factors are some syndromes in which there is no apparent underlying cause for the excessive red cell destruction. These are usually referred to as "idiopathic" acquired hemolytic anemias.

In perhaps about half of these "symptomatic" and in a higher per cent of the "idiopathic" hemolytic anemias it is possible to demonstrate the presence of abnormal immune body reactions by the methods available today. However, as methods for detection of abnormal immune bodies improve it is possible that immune bodies will be demonstrable in most of these particular hemolytic anemias.

Recognition of an Increased Rate of Red Cell Destruction

The frequency of diagnosis of hemolytic processes is directly proportional to a high index of suspicion. A family history of anemia may indicate the presence of one of the congenital hemolytic anemias. The possibility of exposure to industrial chemicals such as lead, benzene, aniline and others, must be inquired into. A detailed history as to the ingestion of drugs, chemicals or animal and vegetable poisons may be revealing. This type of inquiry, for example, led to the solution of acute hemolytic anemias in certain children[23] who had eaten moth balls. The large number of diseases with which hemolytic anemias have been noted must be kept in mind. In short, whenever confronted by a patient with anemia, an excessive rate of blood destruction must be considered as one of the possible causes of the anemia.

A. *Signs indicative of increased red cell destruction.*

1. Physical findings

a. Splenomegaly.—There is a rather high degree of correlation but hemolytic anemias may be present without splenomegaly. On the other hand, splenomegaly often occurs without increased red cell destruction.

b. Jaundice.—Excessive hemolysis must always be included in the differential diagnosis of jaundice. It is important to note that excessive hemolysis is not always accompanied by jaundice. The presence or absence of jaundice depends upon the ability of the liver to excrete bilirubin.

2. Laboratory findings

a. Serum bilirubin.—If serum bilirubin increases and gives an "indirect" Van den Bergh test, increased red cell destruction is quite likely. (Characteristically, no bilirubin is found in the urine under these circumstances.) However, as indicated above, the serum bilirubin level depends upon liver function and so may or may not be elevated even though a rather marked degree of hemolysis is present.

b. Peripheral blood.—Examination of a stained blood film often leads to the diagnosis of hemolytic anemia. Spherocytosis whether due to hereditary defects of the red cells or caused by circulating injurious agents is highly suggestive of increased hemolysis. Poikilocytosis is another sign associated with a shortened life of the red cell. This may represent excessive fragmentation of the red cells which can result from chemical injury such as has been observed in naphthalene poisoning, or from abnormally formed cells as in "Mediterranean" anemia. Sickle cell anemia can occasionally be diagnosed from the ordinary stained blood film.

Signs of increased red cell regeneration in the peripheral blood may be the result of an increased rate of red cell destruction. Large cells with a bluish-gray tinge (polychromatophilic cells) are young cells and if present in increased numbers usually indicate increased red cell regeneration. The finding of nucleated red cells often has similar implications.

Basophilic stippling represents precipitation of remnants of the ribonucleoproteins which are found in early forms of the cells.[20] Heavy metal poisoning causes stippling, and increased stippling also occurs in a variety of anemias. From whatever cause, the finding of many stippled cells means an increased number of young red cells in the circulation.

c. Osmotic fragility test.—A simple two tube test[7] can be performed in the office. Because spherocytes rupture more easily than normal cells in hypotonic salt solutions, a positive test confirms the presence of spherocytes found on the blood film.

d. Reticulocyte count.—Normally only 0.5 to 1.5 per cent of the circulating red cells show reticulation. Increased numbers of reticulocytes generally indicate increased red cell regeneration. If blood loss and response to therapeutic agents can be ruled out, the increased regeneration usually results from increased red cell destruction. However, it must be emphasized that increased hemolysis may occur without a reticulocyte response.

e. Sickle cell test.—This test is indicated in every anemic patient in whom there may be even a remote chance of some Negro blood. It is best to use a chemical reducing substance such as a 2 per cent solution of sodium metabisulfite mixed in equal amounts with blood on a slide and coverslipped.[7] If the test is positive at least one important potential cause of the anemia is known.

f. Tests for abnormal immune antibodies.—Most of these should be carried out in experienced, competent laboratories. The finding of antibodies is suggestive that abnormal hemolysis is present. However, antibodies can be present without evidence of increased hemolysis, and increased hemolysis can be present without the demonstration of antibodies. The following are the usual tests for antibodies:[7,20] Coombs' test (direct and indirect), trypsinated cell test,[21] cold agglutinin titer, Donath-Landsteiner reaction, special examinations for other "cold" hemolysins, and tests for "warm" hemolysins. The acid serum test for the abnormal cells of paroxysmal nocturnal hemoglobinuria is included with this group although it is not a test for immune bodies.

One simple test for immune bodies of the cold agglutinin variety can be performed anywhere. It consists of chilling a sample of blood which has been collected into an anticoagulant. With a high titer of cold agglutinins the blood becomes granular. Upon rewarming, the blood again becomes smooth. Increased hemolysis may or may not be present when this test is positive.

g. Hemosiderinuria.—Large amounts of hemosiderin may be consistently found with chronic hemoglobinemia and hemoglobinuria, conditions which are found in paroxysmal nocturnal hemoglobinuria. This finding was recently of great help in the diagnosis of a patient with paroxysmal nocturnal hemoglobinuria.

h. Bone marrow.—Erythroid hyperplasia frequently is the result of increased demands resulting from increased hemolysis, but other causes must be strongly considered. Bone marrow examination may prove helpful by showing evidence of a primary disease such as a leukemia or carcinomatosis.

B. *Diagnostic signs of increased red cell destruction.*

1. Hemoglobinemia and hemoglobinuria

Hemoglobinemia results from intravascular hemolysis. Hemoglobinuria occurs whenever the plasma hemoglobin level exceeds the renal threshold for hemoglobin. In most of the hemolytic anemias the hemolysis takes place at a slower rate and apparently "extravascularly" because hemoglobinemia is uncommonly seen. Severe transfusion reactions and certain septicemias frequently have hemoglobinemia. Also, we have seen a patient with chronic lymphatic leukemia who had two or three acute episodes of hemoglobinemia. Paroxysmal cold and paroxysmal nocturnal hemoglobinuria regularly show hemoglobinemia. But usually the diagnosis of increased hemolysis must be made on other evidence.

2. Fecal urobilinogen

The most useful and practical means to diagnose an increased rate of red cell destruction is the quantitative determination of the average daily output of fecal urobilinogen in a four-day stool collection.[15] Although heavy nitrogen tracer studies have indicated there is more than one source of fecal urobilinogen[9] from a clinical point of view, when the fecal urobilinogen is increased an increased rate of red cell breakdown is present. For most helpfulness, the fecal urobilinogen should be related to the circulating hemoglobin mass either as an "apparent wastage"[18] figure or as a "hemolytic index" figure.[11]

It is important to realize when interpreting fecal urobilinogen values, that falsely normal values can occur. Antibiotics such as aureomycin and terramycin given even in small doses can alter the intestinal flora so that the bilirubin is not converted to urobilinogen in the usual way. Other unknown factors also interfere with this conversion. Constipation and diarrhea may lead to erroneous results. If the sample weighs less than about 300 grams, it should not be considered as an adequate four-day stool specimen.

3. Red cell tracer studies

As outlined above, the red cell tracer methods, especially the Ashby technique, not only can show the presence of increased red cell destruction but also can be used to differentiate whether intrinsic or extrinsic factors are causing the excessive breakdown. However, the isotopic tracer studies are strictly research methods, and few would agree that even the Ashby technique could be considered a clinical procedure.

In general then, the diagnosis of increased red cell destruction, in the absence of hemoglobinemia, must be made on the basis of the signs of increased red cell destruction and regeneration coupled with reliable fecal urobilinogen determinations.

Treatment of Hemolytic Anemia

Since hemolytic anemia can arise from a wide variety of causes, rational therapy demands that the pathogenesis of the excessive blood destruction must be accurately diagnosed in the individual patient. When an infectious disease is the cause, appropriate specific treatment of the infectious disease is the avenue of approach. When the hemolysis is due to toxic agents there is no specific therapy other than insurance against further exposure to the inciting agent.

Whenever severe hemolytic anemia is associated with hyperimune bodies treatment with ACTH or cortisone can be tried. There is some evidence that ACTH and cortisone reduce the titers of the antibodies. Some reports are enthusiastic about the results.[3] Our own limited experience has not been too gratifying. However, if the hemolytic process with immune antibodies is so severe as to require therapy, ACTH or cortisone should be tried if no contraindications exist.

In the patient with symptomatic hemolytic anemia, at times treatment directed at the primary disease may prove fruitful. For example, we have rarely seen patients with lymphocytic leukemia whose hemolytic processes have decreased markedly after deep x-ray therapy. In one instance the x-rays were directed to the spleen while in another patient mediastinal and axillary lymph nodes were irradiated. Blood transfusions also were given. The second patient previously had had his spleen removed.

"Idiopathic" acquired hemolytic anemia sometimes is self-limited but occasionally requires aggressive therapy: ACTH or cortisone; at times splenectomy.

Splenectomy: Splenectomy is not indicated when septicemia, parasitic invasion of the red cells, or chemical poisoning causes hemolytic anemia. However, in other hemolytic anemias, whenever the spleen is large and the hemolytic process fulminating, splenectomy may give dramatic results. Often, however, there is no real response. In certain patients with leukemia, when excessive hemolysis is the immediate problem, splenectomy may prove beneficial in reducing the transfusion demands.[6] Splenectomy can be expected to give good results nearly 100 per cent of the time only in hereditary spherocytosis; otherwise the results are variable. Splenectomy itself has a low mortality rate, but partly because of the danger of postoperative thrombotic processes, we have been rather conservative in recommending the procedure.

Blood transfusions: For supportive therapy blood transfusions are the mainstay. However, there is greater danger of transfusion reactions in patients with hemolytic anemia than in others. This is especially true in those who have hyperimmune bodies. With chronic hemolysis requiring repeated transfusions the danger of producing exogenous hemosiderosis is real. Therefore, to help limit the amount of blood transfused, it is best not to attempt to keep the hemoglobin higher than 10 gm. per 100 ml. of blood.

Iron: In general, iron should not be given to patients with hemolytic anemia. They are not losing iron and therefore do not need iron. Theoretically, iron therapy is objectionable because it adds to the iron stores of the body. The iron stores are increased by the iron of transfused blood cells and so iron therapy may help to produce exogenous hemosiderosis. Paroxysmal nocturnal hemoglobinuria with its consistent loss of iron (hemosiderinuria) is an exception.

Liver (Vitamin B_{12}): Of no use in the hemolytic anemias.

References

1. Ashby, W.: The determination of the life of the transfused blood corpuscles in man. J. Exper. Med., 29:267, 1919.
2. Crosby, W. H.: Analytical review: the pathogenesis of spherocytes and leptocytes (target cells). Blood, 7:261, 1952.
3. Dameshek, W.; Rosenthal, M. C., and Schwartz, L. I.: The treatment of acquired hemolytic anemia with adrenocorticotrophic hormone (ACTH). New England J. Med., 244:117, 1951.
4. Dornhorst, A. C.: Analytical review: the interpretation of red cell survival curves. Blood, 6:1284, 1951.
5. Emerson, C. P., Jr.; Shen, S. C.; Ham, T. H., and Castle, W. B.: The mechanism of blood destruction in congenital hemolytic jaundice. J. Clin. Investigation, 26:1180, 1947.
6. Hagen, P. S., and Watson, C. J.: Hypersplenism and hemolytic anemia in leukemia: Results of splenectomy. Proc. Third Intl. Cong. Intl. Soc. Hematology, C. V. Moore, ed., p. 95. New York: Grune and Stratton, 1951.
7. Ham, T. H.: A Syllabus of Laboratory Examinations, T. H. Ham, ed. Cambridge, Mass.: Harvard University Press, 1950.
8. London, I. M.; Shemin, D.; West, R., and Rittenberg, D.: Hemosynthesis and red blood cell dynamics in normal humans and in subjects with polycythemia vera, sickle-cell anemia, and pernicious anemia. J. Biol. Chem., 179:463, 1949.
9. London, I. M.; West, R.; Shemin, D., and Rittenberg, D.: On the origin of bile pigment in normal man. J. Biol. Chem., 184:351 and 373, 1950.
10. Loutit, J. F.: Discussion on the life and death of the red blood corpuscle. Proc. Roy. Soc. Med., 39:757, 1946.
11. Miller, E. B.; Singer, K., and Dameshek, W.: Use of daily fecal output of urobilinogen and hemolytic index in measurement of hemolysis. Arch. Int. Med., 70:722, 1942.
12. Mollison, P. L.: Blood Transfusion in Clinical Medicine. Springfield, Illinois: Charles C Thomas, 1951.
13. Ponder, E.: Analytical review: certain hemolytic mechanisms in hemolytic anemia. Blood, 6:559, 1951.
14. Schrumpf, C. A. A.: Role of the Spleen in Familial Spherocytosis. Proc. Third Intl. Cong. Intl. Soc. Hematology, C. V. Moore, ed., p. 94. New York: Grune and Stratton, 1951.
15. Schwartz, S.; Sborov, V., and Watson, C. J.: Studies of urobilinogen. IV. Quantitative determination of urobilinogen by means of Evelyn photoelectric colorimeter. Am. J. Clin. Path., 14:598, 1944.
16. Singer, K., and Dameshek, W.: Symptomatic hemolytic anemia. Ann. Int. Med., 15:544, 1941.
17. Singer, K.; King, J. C., and Robin, S.: The lifespan of the megalocyte and the hemolytic syndrome of pernicious anemia. J. Lab. & Clin. Med., 33:1068, 1948.
18. Watson, C. J.: Handbook of Hematology, Hal Downey, ed., p. 2506. New York: Paul Hoeber, Inc., 1938.
19. Watson, C. J.: Hemolytic jaundice and macrocytic hemolytic anemia: Certain observations in a series of 35 cases. Ann. Int. Med., 12:1782, 1939.
20. Wintrobe, M. M.: Clinical Hematology, 3rd ed. Philadelphia: Lea and Febiger, 1951.
21. Wright, C. S.; Dodd, M. C., and Doan, C. A.: Use of trypsin treated red blood cells for demonstrating antibody in hemolytic anemias. Ohio State Univ. Health Center J., 2:86, 1949.
22. Young, L. E.; Platzer, R. F.; Ervin, D. M., and Izzo, M. J.: Hereditary spherocytosis II. Observations on the role of the spleen. Blood, 6:1099, 1951.
23. Zuelzer, W. W., and Apt, L.: Acute hemolytic anemia due to naphthalene poisoning. J.A.M.A., 141:185, 1949.

Veterans Administration Hospital

DANGER OF AMMONIUM CHLORIDE ACIDOSIS

Report of Case

JAMES MYHRE, M.D.
Minneapolis, Minnesota

ENTERIC-COATED ammonium chloride is a valuable diuretic agent in the treatment of congestive heart failure. When it is used in conjunction with the mercurial diuretics, it enhances diuresis by potentiating the action of the organic mercurial. These valuable drugs are in common general usage. It is felt that the danger of acidosis from ammonium chloride often is not too well appreciated and therefore an illustrative case is being reported to call attention to this real danger.

The diuretic action of ammonium chloride may be due to two factors.[1] One hypothesis is that when the kidney is presented with an excess of chloride ions, it excretes the chloride with water. Another is that the increased body acidity from the "acid producing" salt causes the increased excretion of salt with water to maintain a balanced composition of body fluids. The exact method of potentiation of the diuretic action of the organic mecurial diuretics by ammonium chloride is as yet not completely defined.[2]

Case 1.—A seventy-five-year-old white woman was first seen on June 12, 1951, complaining of shortness of breath on exertion, need of being propped up on four or five pillows to sleep, and swelling of the ankles for two years. She also complained of a severe lower lumbar backache since gaining a great but inexact amount of weight during the past six months. She had been living alone, had been quite depressed and had been eating poorly. There was a history of high blood pressure of twenty years duration.

On physical examination she was 5 feet 1½ inches tall and weighed 231 pounds. There was bilateral thickening of the ear drums, purulent crusting in the right nasal cavity and cloudiness of both maxillary sinuses on transillumination. There was marked fetor oris and a mild generalized pyorrhea alveolaris. Good visualization of the fundi was not possible. The blood pressure in the right and left arms was 180/120 mm. Hg. The heart was enlarged to the left and the sounds were distant. Moist râles were heard at both lung bases. A sharp liver edge was found four fingers below the right costal margin. The spine was rather fixed with only forward and backward bending and pain on bending to either side, especially to the right. There was moderate pitting edema of the lower extremities. Both ankle jerks were absent.

Laboratory Studies.—There were 14.3 grams % (Evelyn) or 91.7 per cent hemoglobin with 4.88 million red blood cells and a hematocrit of 45 per cent. There were 10,800 white blood cells with a normal differential count. The sedimentation rate was 62 millimeters per hour (Westergren). The urine had a specific gravity of 1.020 with a trace of albumin and eight to ten white blood cells in a high-powered field. The Kolmer-Wassermann was four plus. Two stool specimens were negative for occult blood. An agglutination test for brucellosis was negative. The vital capacity was 1.2 litres of 39 per cent. The calcium gluconate circulation time was twenty-one seconds (normal ten to sixteen seconds). An electrocardiogram indicated myocardial damage with a low T_1, low T waves in the V leads, and a left axis deviation. X-ray examination of the lumbosacral spine showed hypertrophic arthritis and osteoporosis of the lumbar spine and minimal hypertrophic arthritis of both sacroiliac joints.

Clinical Course.—The patient was admitted to the hospital on June 21, 1951, weighing 228 pounds, and was placed on an 800 calorie salt-free diet (1 gm. of sodium per day), digitalis, ammonium chloride, and mercurial diuretics. The blood urea nitrogen on admission was 7.8 mg. per cent. She was given 1 cc. mercuhydrin on the first hospital day, 1.5 cc. on the fifth hospital day, and 2 cc. on the ninth hospital day. She was given 2 gm. of enteric-coated ammonium chloride four times daily for the first twelve days. On approximately the tenth hospital day she became quite anorexic, and this was followed by severe weakness, clouding of her sensorium, confusion, and incontinence of urine. The CO_2 combining power on the twelfth hospital day was 26 volumes per cent with a plasma chloride of 674 mg. per cent (normal 540-620) and a blood urea nitrogen of 62.5 mg. per cent. The blood sugar was 119 mg. per cent, and the serum sodium was 149 milli-equivalents (normal 138-146). The serum potassium was 16 mg. per cent (normal 16-22). Four times in twenty-four hours she was slowly given 250 cc. of five per cent sodium bicarbonate intravenously. Definite clinical improvement was observed in twelve hours, and in three days the CO_2 combining power was 56 volumes per cent with a plasma chloride of 639 mg. per cent. On the eighteenth hospital day the blood urea nitrogen was normal with a plasma chloride of 558. From then on she tolerated the salt-free diet and digitoxin well and was discharged on July 17, 1951 (twenty-sixth hospital day) weighing 213 pounds. In May 1952, the patient was feeling well and the urinalysis was normal with a maximum specific gravity of 1.024 on a urine concentration test.

Conclusions

A patient with congestive heart failure became anorexic, weak, confused, incontinent, and semicomatose during treatment including ammonium chloride. A cerebrovascular accident and salt depletion syndrome had to be considered. The symptoms were, however, proved to be caused by ammonium chloride acidosis, and the patient responded dramatically to intravenously administered sodium bicarbonate. This entity can be rather subtle especially when limited laboratory facilities are available. Ammonium chloride must be used cautiously where associated renal disease is suspected or present, and this is difficult to establish in congestive heart failure. Renal insufficiency in congestive heart failure would only be suspected in the presence of albuminuria, oliguria, and mild elevation of the blood urea nitrogen or non-protein nitrogen. Significant renal disease should, however, be greatly suspected[3] when there is marked persistent albuminuria, low-fixed specific gravity, and elevation of the blood non-protein nitrogen above 60 mg. per cent. In these instances ammonium chloride must be administered with extreme caution. It is believed that ammonium chloride for diuretic purposes should not be given over three days a week unless repeated CO_2 combining power determinations are made.

References

1. Goodman, Louis, and Gilman, Alfred: The Pharmacological Basis of Therapeutics, p. 631. New York: The Macmillan Co., 1941.
2. Hilton, James G.: Potentiation of diuretic action by ammonium chloride. J. Clin. Investigation, 30: 1105-1110, 1951.
3. Sleisinger, M. H., and Freedberg, A. S.: Ammonium chloride acidosis. Circulation, 3:837-845, 1951.

THE SOCIALIST-COMMUNIST IDEA

As a teacher in public schools, I find that the socialist-communist idea of taking "from each according to his ability" and giving "to each according to his need" is now generally accepted without question by most of our pupils. In an effort to explain the fallacy in this theory, I sometimes try this approach with my pupils:

When one of the brighter or harder-working pupils makes a grade of 95 on a test, I suggest that I take away 20 points and give them to a student who has made only 55 points on his test. Thus each would contribute according to his ability and—since both would have a passing mark—each would receive according to his need. After I have juggled the grades of all the other pupils in this fashion, the result is usually a "common ownership" grade of between 75 and 80—the minimum needed for passing, or for survival. Then I speculate with the pupils as to the probable results if I actually used the socialistic theory for grading papers.

First, the highly productive pupils—and they are always a minority in school as well as in life—would soon lose all incentive for producing. Why strive to make a high grade if part of it is taken from you by "authority" and given to someone else?

Second, the less productive pupils—a majority in school or elsewhere—would, for a time, be relieved of the necessity to study or to produce. This socialist-communist system would continue until the high producers had sunk—or had been driven down—to the level of the low producers. At that point, in order for anyone to survive, the "authority" would have no alternative but to begin a system of compulsory labor and punishments against even the low producers. They, of course, would then complain bitterly, but without understanding.

Finally, I return the discussion to the ideas of freedom and enterprise—the market economy—where each person has freedom of choice, and is responsible for his own decisions and welfare.

Gratifyingly enough, most of my pupils then understand what I mean when I explain that socialism—even in democracy—will eventually result in a living death for all except the "authorities" and a few of their favorite lackeys.—A letter from THOMAS J. SHELLY, teacher of economics and history, Yonkers High School, Linden and Poplar Streets, Yonkers 2, N. Y., Jan. 20, 1951. *Pennsylvania Medical Journal*, December, 1952.

FRIEDLANDER'S PNEUMONIA

JOHN P. DAHLSTET, M.D.
Mankato, Minnesota

A CORRECT diagnosis is facilitated by the physician's bearing in mind the existent possibilities and probabilities. There is perhaps a tendency in recent years to ascribe many obscure infections to a "virus" without having first exhausted the other existent possibilities. It seems, therefore, apropos to call attention at this time to Friedlander pneumonia.

While Friedlander's pneumonia is a relatively infrequent type—having been estimated at from 0.5 to 5.0 per cent of all pneumonias—it is nonethe-less important. It is a severe disease with a high mortality—of 70 to 80 per cent—and with a high incidence of complications in those cases which survive.

Since the ordinary types of pneumonia have shown a relative decline, and the atypical pneumonias a relative increase in incidence, and because Friedlander's responds not to penicillin, Aureomycin or Terramycin, early recognition and the institution of proper therapy are of paramount importance. The causative agent is the Friedlander bacillus, or *Bacillus mucosus capsulatus,* a short Gram-negative non motile rod with a thick capsule. Friedlander's pneumonia is more common in males in a ratio of five to one. It is most common in the age bracket of forty to sixty-five, only a few cases having been reported in children. There is a higher incidence in the winter months. Alcoholism, malnutrition and other debilitating influences are thought to be important predisposing factors. Any lobe or combination of lobes may be affected. The consolidation is often lobular or confluent rather than lobar. The involved portion of the lung is voluminous. There is considerable plural inflammation with a reddish, fibrinous exudate. The alveolar exudate is abundant, and characteristically tenacious. The lung parenchyma is frequently destroyed with frequent formation of pus-filled abscesses. Pulmonary edema, pleural effusion, empyema, and pericarditis are complications often found at autopsy, and jaundice occurs in over 10 per cent of acute cases. The disease usually begins abruptly with the onset of a more or less productive cough, pleuritis, perhaps hemoptysis, and chills. There may be cyanosis and dyspnea.

The patient may appear desperately ill, much more so than the physical findings would indicate, for the physical signs of this disease are not diagnostic. The temperature most commonly is 102 degrees or under, and there may be only a relatively slight leukocytosis. The sputum is thick and tenacious, at times very viscid. Until the use of streptomycin altered the outcome, the usual course was to an early death in two to six days, with a mortality rate of from 70 to 80 per cent. A few patients respond quickly and completely, while a third group progresses to a chronic form of this disease, with the formation of one or more thin walled abscesses. It is felt there is a definite tendency for tuberculosis to develop subsequent to Friedlander's pneumonia.

This disease must be differentiated from other bacterial pneumonias—influenzal, pneumococcic, streptococci, and staphylococcic, and from the so-called virus pneumonias. The patient with Friedlander's infection is usually a male over forty years of age, often with a history of a preceding chronic respiratory infection. He is obviously gravely ill. Herpes labialis—as seen frequently in lobar pneumonia—is uncommon; the sputum is usually thick, glairy, mucoid, and often red. Physical findings are not commensurate with the degree of lung involvement. In pneumococcic pneumonia the temperature is usually high and the physical findings of lobar consolidation characteristic. The respirations are short, grunting, and rapid, and the sputum rust colored. A well marked leukocytosis is noted, predominantly of the polymorphonuclear type. In hemolytic streptococcic pneumonia, the disease often follows infection elsewhere in the body with pharyngitis, laryngitis, and tracheobronchitis commonly preceding pneumonia. Staphylococcic pneumonia is usually seen in early childhood, as is the influenzal pneumonia. Virus pneumonia is more common in young adults and its onset tends to be gradual, rarely accompanied by a true chill. Weakness and persistent cough

---

Read at the Annual Meeting of the Southern Minnesota Medical Association, Austin, Minnesota, September 8, 1952.

are common, but severe prostration and death are rare.

On x-ray, Friedlander's pneumonia must be differentiated from pulmonary tuberculosis and neoplasm, and from an x-ray standpoint three different classifications of Friedlander's have been noted. First of these is the massive lobar consolidation type in which a single lobe or an entire lung field may be obscured by a dense uniform exudate which may give the appearance of bulging. Second of these is the lobular consolidation type with a patchy irregular density later becoming confluent. The third group is a chronic form characterized by lung abscess formation and pulmonary suppuration. The abscesses may form relatively early in the course of Friedlander's infection and apparently are due to parenchymal destruction with filling of the area by a thick, tenacious exudate accompanied by atelectasis and ischemia. Changes may closely resemble tuberculosis or bronchiectasis.

Case Report

The patient is a fifty-nine-year-old white male mechanic. His father died of pulmonary tuberculosis. The patient had been well until the latter part of April, 1952, although he stated he had lost some 25 to 30 pounds in weight since January, 1952. His initial symptoms had been pain in the right scapular region with generalized malaise, and a persistent and unproductive cough.

During the first week of May, 1952, he noted not only an increasing weakness, but the onset of chills and fever, and some productiveness of the cough. He came to my office on May 9, scarcely able to drag himself into the reception room. Examination at that time revealed a temperature of 100.8°F, respiration of 28. and a pulse rate of 84. The eyes, ears, nose, and throat, were not remarkable. There was no cervical or other adenopathy, and the skin was moist with no cyanosis or flushing. The heart was regular at a rate of eighty-four with the tones distant and the left heart border 13 cm. to the left of the midsternal line. The blood pressure was 100/60 mm. Hg. A few moist rales were heard at each base posteriorly and there was thought to be diminished resonance in the right interscapular area with a slight decrease in breath sounds over the same region. The abdomen was soft, flat, nontender, with liver, kidneys, and spleen not palpable. The genito-urinary system was normal, and a rectal examination negative. The extremities were not remarkable. In December of 1951, this man had had a thorough examination including a chest x-ray which was essentially negative.

The patient was hospitalized on May 9, and a chest film made in addition to a complete blood count, sedimentation rate, and urinalysis. The hemoglobin at that time was 11.6 gm., the red count was 4 million, the white blood count 5,200, and the sedimentation rate by the Westergren method was 115 mm. per hour. The chest film revealed a marked, fairly soft infiltration throughout most of the right lung field, most marked in the upper portion with fibroid strands radiating upward and laterally from the right hilum.

Because the patient appeared so desperately ill, intensive therapy with penicillin and Aureomycin was begun at once. He was also digitalized because the moist rales at each base and the increase in heart size on x-ray would indicate a beginning decompensation. Sputum was obtained for bacteriological study and for Papanicolaou stain, but because of somewhat limited laboratory facilities locally, the specimen was sent to a metropolitan laboratory. Penicillin and Aureomycin were continued, and because the patient appeared clinically to have an overwhelming infection, it was decided to support him further with whole blood transfusions, which were given on May 13 and May 14. A 1:1000, and subsequently a 1:100 Mantoux test were both negative. Reports from the State Board of Health repeatedly were negative for acid-fast bacilli. However, for some reason or another we were unable to receive a report of any other pathogenic flora. On May 19, dihydrostreptomycin 0.5 Gram every twelve hours, and triple sulfa 1 gm. four times daily was substituted for penicillin and Aureomycin. Subsequent to this the patient's temperature remained below 100°F orally, and he improved generally with only little productive cough. However, the chest films did not reveal a commensurate improvement. On May 19, a heavier degree of infiltration was noted in the right upper lung field with evidence of multiple cystic areas as had been seen before. On May 26, a slight band of infiltration had begun in the second and third innerspace on the left with no change on the right. On June 2, this infiltration on the left had increased. Meanwhile, on May 30, the patient had refused further injections and finally on June 5 left the hospital to remain in bed at home. On June 3, however, before his dismissal from the hospital, a bronchoscopy was performed by Dr. J. D. Sjoding. This was essentially negative, but some exudate was aspirated and bacteriological studies on the exudate confirmed the diagnosis of Friedlander's pneumonia, and the patient was then prevailed upon to continue streptomycin, and triple sulfa. In three days more he became afebrile and gained in strength and appetite. After four days with no fever the medications were stopped. He continued to improve until on July 18 when he was suddenly stricken with a severe chill and his temperature rose to 103°F. Dihydrostreptomycin in 0.5 Gram doses twice daily was reinstituted, and the triple sulfa in one gram doses four times daily was also begun. He responded nicely, clinically, and has continued to do so until the present time, although there is still considerable infiltration in the left upper lung field on x-ray.

The patient has now agreed to continue medication as long as I consider it necessary, and at the present time remains afebrile, and feels well generally. It is to be hoped that he will continue to improve, and that he may progress to a favorable outcome without the necessity for surgical interference.

(Continued on Page 144)

THE RESPONSIBILITY OF THE PRACTICING PHYSICIAN AND HEALTH DEPARTMENT IN THE CARE OF THE AGED

ROBERT N. BARR, M.D.
Minneapolis, Minnesota

MINNESOTA has been fortunate not only in its natural resources but in the people that first settled in this area even when it was known as a part of the Dakota Territory. They were persons of high ideals, who believed in local independence of government, universal education, and individual initiative and responsibility. They put these convictions into action as is illustrated by our township form of government, the provision for a University in our State Constitution and the constitutional provision that two sections of land in every township in the State be set aside for school purposes.

These convictions have persisted and today color our present thinking and action and have had a definite effect on our present form of health organization and activities. We believe they account for the fact that Minnesota was the third state to organize a State Department of Health in 1872 through the leadership of Dr. Charles N. Hewitt and the State Medical Association; for the fact that the Board of Health consisting of nine members trained in sanitary science and appointed by the governor serving overlapping terms of three years has never been dominated by partisan politics, and that during this entire period, 1872 to date, we have had only four state health officers. Our state's health officer and its health staff have enjoyed the prestige of being leaders in the many health fields at both the state and national level.

We believe that these early activities and principles of organization, administration and health programs account for the fact that there has always been a close working relationship among the medical, nursing and dental professions, the hospitals, the University of Minnesota, the many voluntary agencies interested in health problems, and the State Department of Health. Likewise similar relations have been established with the numerous other official and non-official agencies whose program and services parallel or even in some instances, overlap those of the Department of Health. For example, in the early years, the Health Department laboratories and most of its services were moved to the University campus; thus the University of Minnesota Medical School and the State Board of Health jointly employed certain technical personnel in order to be able to secure men of outstanding ability and national reputation. This is no longer necessary and has been discontinued, but this relationship is still a real incentive in attracting staff for both organizations, and each organization gives the other certain technical advice and assistance. The Department of Health provides laboratory service to the University Hospitals and Health Service and instruction in certain public health and laboratory courses. Most of the health officers of the townships, villages, cities and counties in Minnesota are local practicing physicians under the general supervision of the State Board of Health who "cause all laws and regulations relating to the public health to be obeyed and enforced."

In 1911, the medical profession, the Minnesota Public Health Association (Tuberculosis Association) and the Minnesota Department of Health completed a study relative to the state's need for sanatoria and an accelerated tuberculosis control program. In 1913 the Legislature provided for the organization of county and multicounty sanatorium commissions, appropriated funds to aid in the construction and equipment of sanatoria and funds to subsidize the treatment of the patients. By 1920, Minnesota had fourteen county sanatoria in addition to its state sanatorium. The bed totals of these institutions greatly exceeded the present accepted standard of 2.5 beds for each annual death from tuberculosis.

Today several of these local sanatoria, having served their purpose, are being converted to meet the need for nursing homes and old people's homes. For many years the care and medical treatment of patients in sanatoria have been reviewed regularly by a committee of physicians outstanding in the field of tuberculosis. This committee is nominated by the Minnesota Trudeau Society and officially appointed by the State Board of Health.

Dr. Barr is with the Minnesota Department of Health.
Read at the Annual Meeting of the Southern Minnesota Medical Association, Mankato, Minnesota, September 8, 1952.

TABLE I. DEATHS IN MINNESOTA BY OCCURRENCE, 1951

Cause of Death	Total	Per Cent
Total	28,145	100
Communicable Disease	1,216	4.3
Accidental Deaths	1,805	6.5
Infant Deaths	1,918	6.9
Chronic Degenerative Diseases	20,153	71.6
Other	3,053	10.8

TABLE II. SHIFT IN AGE GROUPS

	1900	1940	1950
Number Persons 65 Years and Over in Minnesota	66,771	212,618	259,309
Percentage of Total Population	3.8%	7.6%	8.7%

The increase of twenty years in our life expectancy since 1900 is due largely to the reduction in infant deaths and deaths due to communicable diseases. A review of Minnesota's 1951 vital statistics records revealed that Minnesota had the greatest number of live births in its history, 80,047, a rate of 26.5 per 1,000 of population and that only twenty-seven mothers lost their lives as a result of childbirth (a maternal death rate of .3 per 1,000 live births, the lowest rate in Minnesota's history).

Communicable diseases as a cause of death and disability are rapidly becoming relatively unimportant and, concurrently, the so-called chronic or degenerative diseases commonly associated with older age are of prime importance (Table I).

Table I shows a new low in communicable disease deaths (1,216). It is noteworthy that 84.3 per cent (1,025) of these deaths were due to pneumonia and influenza (706), tuberculosis (256) and syphilis (63), of which 75 per cent (765) occurred at age forty-five and over and 49 per cent (498) occurred at age sixty-five and over. Thus these communicable diseases have, for all practical purposes, become diseases of middle and older age. The remaining 191 deaths were due to all other communicable diseases combined and represent only .6 per cent of all deaths. It is of interest that in 1951, Minnesota's population exceeded 3,000,000 (estimate 3,018,163).

On the other hand, accidents as a cause of death and disability show only a moderate decline over the years. They are today the leading cause of death between the ages of one and thirty-five and are responsible for almost 40 per cent of deaths in children (ages one to nineteen).

TABLE III. HOSPITAL BEDS

Category	Total Beds Needed	Existing Acceptable Beds*	Per Cent of Needs Met
General	13,715	10,695	78
Mental	14,912	9,542	64
Chronic	5,963	409	7
Tuberculosis	1,040	1,855	100
Total	35,630	22,501	63%

*Beds housed in fire-resistive quarters.

With more than 70 per cent of our deaths being due to chronic disease it appears that the answer to the problem for all of us was supplied years ago by Dr. William Osler who stated: "The way to enjoy a long and healthy life is to get yourself a chronic disease and then take care of the disease."

The progressive aging of our population is one of the factors responsible for the growing importance of the problem of chronic disease. Table II demonstrates the shift in the number of persons in the older age group in Minnesota during the last fifty years.

It is estimated that this proportion may again be doubled in another twenty-five years. Some of the problems we are faced with today with respect to the care of this group of the population include health and medical care, rehabilitation, employment, housing and living arrangements, recreation, education and welfare. A complete change in the concept of living must be developed for the person of older age if all of us are to maintain our present standard of living. The state has set up a Commission on Aging which is developing information which may aid in providing some of the answers to this problem.

The Hospital Survey and Construction (Hill-Burton) Program is aiding appreciably toward providing good hospital facilities for the state. With the $11,897,218 made available during the first six years, 1,904 additional hospital beds, 180 beds in two nurses' homes and two public health centers have been provided in thirty-eight projects which are completed or in various stages of construction.

The figures in Table III are presented to show the need for additional hospital facilities in Minnesota. (Data based on 1952 State Plan Revision)

There are sixty-six general hospitals which are completely or partially non-fire-resistive containing 1,997 beds which are in need of replacement. These present a serious hazard to life and every effort is being made, in co-operation with the office of the State Fire Marshal to encourage these replacements or the installation of sprinkler systems as rapidly as possible.

Many institutions, although fire-resistive in character, have much to be desired from the standpoint of good services, adequate space, and desirable functional arrangement to insure economy of operation. With the assistance of hospital, medical, nursing, architectural and related groups, regulations for hospitals are now being developed which will raise standards, thereby insuring safe and high quality care for all persons admitted.

There are 288 institutions (nursing homes, boarding care homes and homes for the aged) providing care for this older age group. Many of these are crowded and have long waiting lists. Of the total 9,088 beds, only 2,886 are housed in fire-resistive quarters. Many of these homes lack good facilities and equipment for care; personnel, particularly registered and licensed practical nurses, are in short supply for staffing. In communities where new hospitals are built, the old hospital is frequently converted to a nursing home or a home for the aged. With the addition of a sprinkler system such a facility would aid as a temporary expedient in relieving this ever-growing problem. However, all communities must realize their responsibilities for providing the modern physical facilities which will be well operated and well staffed to assure that all older people who cannot remain in their own homes are kept as healthy and independent as possible. Community groups are also responsible for fulfilling the social, religious, educational and recreational needs of these individuals. New regulations for the construction, equipment, maintenance, operation, and licensing of nursing homes and boarding care homes became effective in February, 1952. Requirements for medical attendance, nursing and other personnel, patient areas, as well as furnishings and equipment for care are outlined and attempts are now being made to classify the existing homes in the state. Educational programs to assist institutions to meet standards, institutes for nursing home operators and superintendents of homes for the aged as well as surveys of existing facilities and needs have been undertaken.

A broad educational program must be developed to teach people the value of good medical services and good hospital and related care facilities and how they can live longer, happier lives by making use of them. Periodic physical examinations are especially indicated during middle life and continuing throughout the declining years. In this way, the incidence and severity of chronic illness can be reduced and the time postponed when greater use of these facilities becomes necessary. As a comparable example, a great deal has been accomplished in the field of maternal and child health by providing good, basic obstetrical training in our medical schools, by encouraging patients to seek the services of their physicians early during the course of pregnancy and by providing good hospital facilities in the community. Most of the deliveries (98.6 per cent) are now occurring in hospitals and practically all of the births are attended by qualified physicians. This is the reason for Minnesota's low rates in maternal and infant mortality. Many of us believe that such services have set a pattern or guide that should be carefully analyzed and followed in attacking the present-day problem of the chronic diseases. Also important is the development and expansion of diagnostic services and the recruitment and training of a sufficient number of personnel to provide preventive service, early recognition of the disabling diseases and adequate rehabilitation. This includes physicians trained in physical medicine and rehabilitation, orthopedics and related fields as well as the necessary therapists. A more adequate supply of pathologists, radiologists, and laboratory and x-ray technicians must also be provided.

With adequate rehabilitation facilities and expert personnel, much can be done for patients doomed to invalidism and dependent upon the community for support. Even a partial remedy would contribute materially in easing some of the tax load carried by the earning public. Minnesota lacks well-equipped facilities and qualified personnel to provide such services in that it has only 7 per cent of its needs met in the chronic disease hospital category.

Without question there is probably not a single physician in Minnesota who has not recognized some of these problems relative to his own community and who was not, in many instances, made real attempts to resolve some of them. The profession as a group under the guidance of the Minnesota Medical Association has, in the past, played the leading roll in the solution of the problems of communicable diseases and maternal and child health. As a result of their accomplishments they have, so to speak, actually created the problem of the care of the aged by extending the lives of the people of Minnesota to the point where, during the past year, the average age of death was sixty-three years. Today society again looks to the medical profession for leadership in resolving the ever-growing problem of protection of the health and care of the aged.

Official agencies such as the State Health Department, the Welfare Department, the Department of Institutions as well as local government and voluntary agencies can assist greatly in providing facilities, the training of personnel to operate such facilities and the education of the public in making use of facilities and services in the local community in the same way as was done in reducing maternal and infant deaths in Minnesota. In this program, government assumed in almost every instance the role which most of us believe to be its proper place.

1. It assisted in providing hospital facilities.
2. It assisted in providing training facilities and services for medical, hospital and other auxiliary personnel.
3. It provided certain laboratory services that could be most efficiently and economically performed at the State level (as, for example, the bacteriological and serological services of the State Department of Health).
4. Through its health services it assisted community educational services and programs to encourage the proper use of medical facilities and services at the community level.
5. Through its welfare department in co-operation with the medical profession it provided means for paying for medical and hospital services for the medically indigent.
6. It recorded the births and deaths.

In the last analysis, government in the maternal and child health program assisted essentially only at those levels where the individual and the local community had need and could not economically and efficiently make provision for such. It would thus appear that in the maternal and child health program, we have developed a procedure that should be used as a guide in the solution of the problem of our aging population and its associated chronic degenerative diseases.

The Minnesota Medical Association is still looking ahead in the maternal and child health field by conducting a continuous maternal mortality study in Minnesota. It has taken the leadership in developing a pilot study of the neonatal deaths in Hennepin County. It instigated a study of the needs for trained laboratory personnel in doctors' offices and hospital laboratories that will result in better training of present laboratory technologists and laboratory aides. This will also increase the number of such trained persons that will be available in the future. It assisted the Minnesota Hospital Association in developing legislative provisions to improve the facilities and services of Minnesota hospitals and related institutions.

The results of these and many other similar undertakings have been so outstanding that they are being followed in many other states. For example, eleven states this year have requested information in detail about the maternal mortality study.

Minnesota's first statewide maternal mortality study was conducted in 1941-1942 (July 1, 1941-June 30, 1942). It was resumed in 1950 and is now in its third consecutive year. It is a joint undertaking of the Minnesota Medical Association and the Minnesota Department of Health which receives the co-operation of the Minnesota Hospital Association and the Department of Obstetrics of the University of Minnesota. Yet it must be emphasized that this is primarily a study carried out by the Minnesota Medical Association in an effort to reduce preventable deaths by eliminating all possible hazards of pregnancy and childbirth.

In 1941, Minnesota vital statistics records reported 54,542 live births, of which 73 per cent occurred in hospitals, 107 maternal deaths (a rate of 2 per 1,000 live births) of which 73 per cent were considered preventable by the study committee. In 1951, we had 80,047 live births of which 98.6 per cent occurred in hospitals. There were twenty-seven maternal deaths (a rate of .3 per 1,000 live births) and only 30 per cent were considered to be preventable by the study committee. The major causes of maternal deaths are still toxemia, hemorrhage, infection, heart disease and anesthetics.

These study reports are invaluable in their use for the education and guidance of physicians and hospital staffs as well as for under-graduate training.

Perhaps their value is still greater in the public recognition that busy members of the medical profession are giving freely of their time in making such a study and in informing all members of the profession as to the results and that these same individuals are assisting the Minnesota Department of Health and Minnesota's hospitals in developing hospital facilities, services and standards in order to prevent further deaths.

A consideration of the pertinent health problems of the people of Minnesota would seem to indicate that those responsible for the administration of health services might well re-evaluate their entire program and place emphasis on those problems which are of greatest importance and where the tax dollar expended can accomplish the greatest good for the majority of the people. Certainly, the care of the chronically ill and the aged with their associated disabilities and the provision of rehabilitation services should receive first consideration.

Emphasis which was previously placed on communicable disease control, maternal and child health, environmental sanitation, et cetera, by those administering public health services should be redirected to these more pressing problems without losing sight of the fact that certain basic control measures must be maintained. For example, in the field of public health nursing this may well mean emphasis on home nursing care and the teaching of people and home makers in the care of the aged and infirm. It undoubtedly also means an expansion of these services to include the provision of advice and assistance particularly to the small nursing homes, homes for the aged and boarding care homes. In like manner, there may be considerable shifting of the emphasis of the services of other public health professions such as public health engineering, health education, nutrition, et cetera. Such re-evaluation will undoubtedly have an impact on the basic factors which determine the size, location, areas served and staffing needs of local health departments and may result in radical changes in the present thinking relative to the basic functions of local health services.

In conclusion, the solution of our present health problems would appear to be based on the provision of good facilities in the community including general hospitals, chronic disease units of general hospitals, rehabilitation centers, nursing homes, homes for the aged and boarding care homes. The second need is that of an adequate supply of well-trained medical and related personnel to provide the preventive and treatment services for the aged and to staff these institutions. This includes not only physicians trained in physical medicine and rehabilitation, geriatrics and related fields, but also well-trained physiotherapists, occupational therapists, laboratory personnel and other allied medical groups. A third need is the development of the recognition on the part of the people as to the importance and magnitude of the problem and the need for each individual to recognize that he has a responsibility to protect himself and his family by first assisting in providing for and then making use of the facilities and services available in his community. Only by so doing can we expect to prevent, cure or at least alleviate chronic illness and its associated disabilities.

The people of Minnesota are interested and searching for guidance in the problems of the aged. We are sure that individually and collectively the medical profession will continue to supply such guidance.

MEDICAL CARE REGARDLESS OF ABILITY TO PAY

Attention is called to a house action which strongly supported programs offering to provide the services of a physician to anyone unable to pay for them.

The House supported the Board of Trustees plea that the AMA "heartily endorse such medical care programs."

The reference committee report, as adopted by the House, follows:

"Protests have been made at various times that medical care is being denied certain individuals because of its cost. As is well known, the prime object of the medical profession is to serve humanity, regardless of reward or financial gain, and with a view to implementation of this principle a number of county medical societies have successfully conducted and publicized programs offering to provide the services of a physician to anyone unable to pay for them, which we believe have conclusively answered such protests.

"The Board of Trustees urges that the American Medical Association heartily endorse such medical care programs and undertake an energetic campaign to implement them, that the constituent state medical societies be encouraged to organize and vigorously promote similar campaigns embodying the principles of such programs, and that these campaigns be made known to the public through every effective medium of communication."—AMA Secretary's Letter, Jan. 12, 1953.

THE USE OF HYDROCORTISONE ACETATE (COMPOUND F ACETATE) IN THE TREATMENT OF POSTTRAUMATIC BURSITIS OF THE KNEE AND ELBOW

EDWARD D. HENDERSON, M.D. and CHARLES C. HENDERSON, M.D.
Rochester, Minnesota

Within recent months hydrocortisone acetate, or compound F acetate (hereinafter referred to as "compound F") has been made available clinically for use as a local antiarthritic agent, and its effect in rheumatoid arthritis has been recognized. However, the beneficial effect appears to be somewhat nonspecific. This fact was observed in isolated patients in whom posttraumatic effusion in knee joints, particularly in those affected with osteoarthritis, was promptly reduced by the intra-articular injection of compound F. Hollander and co-workers[1] tell of their experience in the use of compound F in arthritic joints. Their series includes thirteen patients with various types of bursitis, ten of whom had acute bursitis or tendinitis of the shoulder. Three other patients treated, two with olecranon bursitis and one with prepatellar bursitis, showed marked improvement continuing for a time.

The Present Study

We wish to report on a group of patients with posttraumatic bursitis of the knee and elbow who were treated with compound F at the Mayo Clinic during the past four months. The report is confined to these cases because they present the best opportunity for the objective and direct observation of the results of treatment as well as the judging of subjective improvement. In addition, in these patients the technique of treatment was easily carried out because of the accessibility of the involved bursae. Data on fifteen patients are presented. Four are those of olecranon bursitis, ten are those of prepatellar bursitis, and one is that of pretibial bursitis. The pertinent data on these patients are presented in Table I. Cases 4 and 6 are reported in some detail.

Case 4.—A white woman, fifty-four years old, employed as a maid in a local hotel, came to the Mayo Clinic complaining of pain, tenderness and swelling over the right kneecap of ten days' duration. She had no other complaints and the results of a recent general physical examination had been within normal limits. The patient was found to have a mildly tender, fluctuant mass anterior to the right patella (Fig. 1.) A diagnosis of prepatellar bursitis or "housemaid's knee" was made. The skin over the bursa was cleaned with soap and water, an antiseptic applied and a wheal made with 1 per cent solution of procaine hydrochloride. A 20-gauge needle was then inserted into the bursa and about 8 cc. of dark, bloody-appearing fluid aspirated into a large syringe. The needle was left in place and the aspirating syringe changed for a small syringe containing 12.5 mg. of compound F in a volume of 0.5 cc. The hormone was injected, the needle withdrawn and a dressing applied. The patient was allowed to return to work, but was asked to stay off her knees for at least a week. When she returned a week later, she stated that she had noticed complete relief from pain, tenderness and swelling in the knee within twenty-four hours after the injection. She returned to work as a hotel maid, being on her knees for several hours each day and remained symptom-free for six weeks. At the end of this time the prepatellar bursa gradually began to refill with fluid. The same procedure was then repeated, again with good results as of the date of this report.

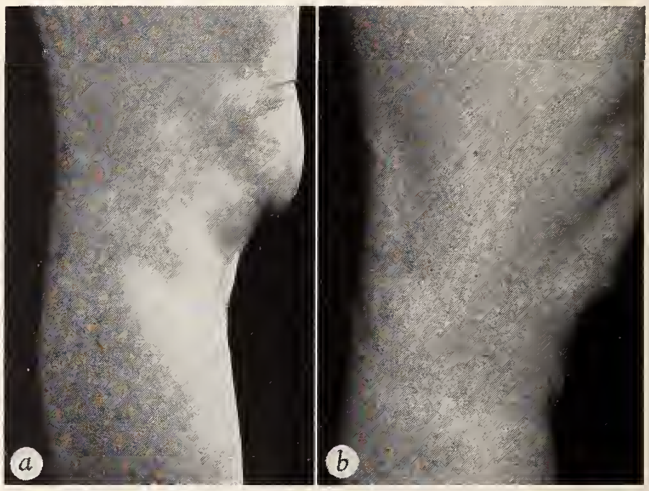


Fig. 1*a* and *b*. Prepatellar bursitis of the right knee before and seven days after injection of compound F.

Case 6.—A patient came in complaining of a painful swelling over the tip of the right elbow of four weeks'

Read at the Annual Meeting of the Southern Minnesota Medical Association, Austin, Minnesota, September 8, 1952.

The hydrocortisone acetate used in this study was supplied by Merck & Co., Inc., Rahway, New Jersey.

Dr. E. D. Henderson is with the Section of Orthopedic Surgery, Mayo Clinic, and Dr. C. C. Henderson is a Fellow in Surgery, Mayo Foundation, University of Minnesota, Rochester, Minnesota.

TABLE I. COMPOUND F IN THE TREATMENT OF POSTTRAUMATIC BURSITIS OF THE KNEE AND ELBOW

Case	Age	Sex	Site of Bursitis	History of Injury	Duration of Bursitis, Days	Fluid Aspirated		Dose of Compound F, mg.	Response	
						Cc.	Color		Degree*	Duration when Last Observed, Weeks
1	64	F	Olecranon	Yes	21	10	Red	12.5	4	16
2	52	M	Prepatellar	Yes	42	4	Red	12.5	4	15
3	52	M	Olecranon	Yes	?	10	Red	25	4	13
4	54	F	Prepatellar	Yes	10	8	Brown	12.5	4 (Recurred)	6
5	43	F	Pretibial	No	10	4	Yellow, clear	12.5 (on 3 occasions)	0	None
6	53	F	Olecranon	Yes	28	7	Red	12.5	4	6
7	20	F	Prepatellar	Yes	21	0		37.5	4	5
8	52	M	Prepatellar	Yes	42	2	Red	37.5	4	4
9	35	M	Prepatellar	Yes	14	4	Red	12.5	4	4
10	34	M	Prepatellar	Yes	4	0	Red	37.5	2 (swelling)	2
11	30	M	Prepatellar	No	6	0	Red	37.5	4	2
12	52	M	Prepatellar	Yes	5	60	Red	37.5	3 (swelling)	2
13	64	M	Prepatellar	Yes	6	15	Yellow, clear	25	4	12 days
14	40	M	Prepatellar	Yes	98	0		12.5	4	12 days
15	62	M	Olecranon	No	56	0	Red	25	4	9 days

*Rated on a basis of 0 to 4, 0 representing no response and 4 representing maximal response.

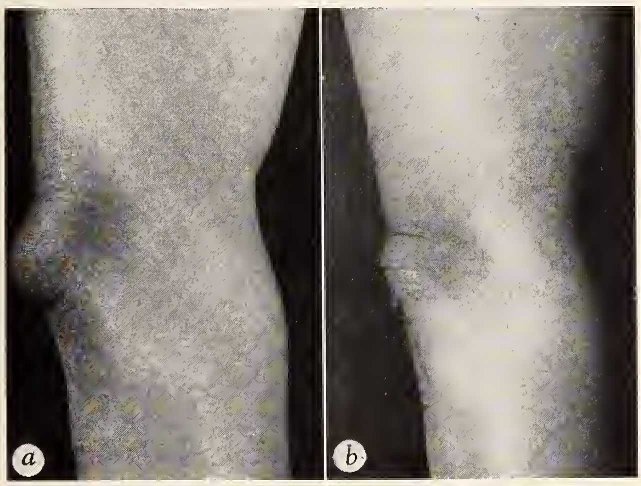


Fig. 2*a* and *b*. Olecranon bursitis of the right elbow before and nine days after injection of compound F.

duration; the swelling had followed a fall on the ice (Fig. 2). A fluctuant tumor was diagnosed as a manifestation of olecranon bursitis and the technique outlined in Case 4 was carried out as an office procedure. The bursa was evacuated of 7 cc. of brownish-red fluid, and 12.5 mg. of compound F in a volume of 0.5 cc. was injected. The patient was improved several hours later and she has remained free of pain or swelling to this date, a period of six weeks. She stated that now the elbows look alike.

The thirteen other patients were treated in a manner similar to that used in Cases 4 and 6.

Of the total series of fifteen patients, ten with prepatellar bursitis and four with olecranon bursitis experienced striking improvement within twenty-four hours and complete relief of symptoms to date with the exception of the patient in Case 4, who had a recurrence of prepatellar bursitis following continuing trauma. The remaining patient is a woman with pretibial bursitis, the bursa overlying the tibial tubercle. There was no history of injury and the bursa contained a clear, yellow fluid. Three separate aspirations followed by injection of compound F failed to effect a cure and the bursa was then excised surgically.

In the thirteen patients in whom unequivocally good results were obtained the dose of compound F varied from 12.5 to 37.5 mg. with no detectable difference in the results. The bursitis responded just as rapidly and completely with the smaller amount as with the larger amount of compound F. Ten bursae were aspirated of their fluid and eight of these contained reddish or brownish fluid, showing the presence of fresh or old blood. Two of the bursae contained a clear, yellow fluid, the condition of one of which failed to respond to the injection of compound F. Five of the bursae were not evacuated, but from three of these enough fluid was aspirated to determine that it was reddish; the condition of all five of these bursae responded rapidly to the injection of compound F as evidenced by prompt and complete disappearance of the tumor. In all the patients in whom the bursitis responded favorably to treatment, the amount of fluid in the bursa steadily decreased in amount, some within twenty-four hours and all within a week.

Comment

There is evidence to support the supposition that compound F is maintained in effective concentrations within the bursal sac for at least several days. In the five patients in whom the fluid was not aspirated prior to injection of the hormone, there was a gradual decrease in the amount of fluid over a period of four or five days. In three of the patients in whom the bursa was aspirated there was a moderate recurrence of the fluid within twenty-four hours, but this fluid gradually disappeared in the next few days.

Aspiration of the bursae and injection of compound F were done as an office procedure in several of the cases presented. The procedure can be done easily with careful attention to aseptic technique and with local anesthesia or with no anesthesia at all. This is in contrast to the trouble and expense and the not infrequent complications involved in the surgical excision of these bursae. It also has obvious advantages over the method of repeated aspirations followed by the use of pressure dressings. The latter method is frequently unsuccessful in spite of persistence of the treatment.

It would seem desirable to limit the use of compound F to those cases of bursitis in which either a history of injury or the presence of blood-stained fluid in the bursa indicates that the condition is of traumatic origin. If frank pus is obtained on aspiration or if true infectious bursitis is present, compound F is probably best withheld. Redness around the bursa may mean only inflammation and not necessarily infection.

A dose of 12.5 mg. of compound F seems to be adequate in all cases, although a large unaspirated bursa could conceivably require twice or three times this dose to produce the desired effect.

Compound F in the dose used seems to have no systemic effects and there have been no complications of this treatment to date.

Summary

Fifteen patients with posttraumatic (noninfectious) bursitis of the knee and elbow have been treated with a local injection of compound F in the past four months at the Mayo Clinic. One patient did not experience a beneficial effect and another had a recurrence of symptoms. The remaining thirteen demonstrated striking and lasting improvement. In the latter group the inflammation and tenderness subsided in twenty-four hours and the effusion disappeared and has not returned.

Bibliography

1. Hollander, J. L.; Brown, E. M., Jr.; Jessar, R. A., and Brown, C. Y.: Hydrocortisone and cortisone injected into arthritic joints; comparative effects of and use of hydrocortisone as a local antiarthritic agent. J.A.M.A., 147:1629-1635 (Dec. 22) 1951.

FRIEDLANDER'S PNEUMONIA

(Continued from Page 136)

Summary

While of infrequent occurrence, Friedlander's pneumonia is nevertheless an important and serious disease. It has a high mortality rate, a high incidence of complications, and requires specific therapy. It is considered of paramount importance to emphasize, therefore, the necessity for a careful differential diagnosis in acute pulmonary infections.

Bibliography

1. Bishop, C. H., and Rasmussen, R. F.: Klebsiella pneumonia treated with Streptomycin. J.A.M.A., 131:821-822, 1946.

2. National Research Council; Committee on Chemotherapeutics and other Agents: Streptomycin in treatment of infections; report of one thousand cases. J.A.M.A., 132:4-11, 70-76, 1946.

3. Learner, N., and Minnich, W. R.: Friedlander pneumonia treated with Streptomycin; Report of a case with prompt recovery. Ann. Int. Med., 25:516-520, 1946.

4. Ritvo, Max, and Martin, Francis: The clinical and roentgen manifestations of pneumonia due to *Bacillus Mucosus Capsulatus* (Primary Friedlander Pneumonia). Am. J. Roentgenol., 62:211-222, 1949.

5. Welford, N. T.: Recovery from primary Friedlander pneumonia (Type B) on therapy with sulfadiazine and penicillin. Illinois Med. J., 90:185-187, 1946.

SENILE NODULAR THYROPATHY

HAROLD H. JOFFE, M.D.
Duluth, Minnesota

THE FAMILIAR signs and symptoms of frank hyperthyroidism are frequently absent in the elderly patient with a toxic nodular goiter. The terms "masked hyperthyroidism, goiter heart and thyrocardiacs" have been used to designate the group of patients with toxic nodular goiters in whom the classical clinical picture of hyperthyroidism is replaced by cardiovascular symptoms such as: dyspnea, weakness, weight loss, congestive heart failure, auricular fibrillation and/or palpitation.[1,2,5,6,7,16,18,22,23] It is in this group that the underlying remediable cause is frequently either undiagnosed with resultant death or diagnosed too late so that the cardiovascular damage is irreversible.

The purpose of this paper is to review (1) ten instances of cardiovascular deaths with necropsy from 1937 through 1951 resulting from undiagnosed nodular goiter; and (2) review histories of thirty-one patients with nodular goiter discovered out of 227 thyroidectomies, during this same period, in people over fifty years of age in whom the outstanding clinical symptoms were of a cardiovascular nature. These groups will be designated as I and II, respectively. None of the patients exhibited hypertension, coronary and/ organic heart disease.

Symptoms

The sex ratio was two to one in favor of females in one reported series of twelve cases.[7] In our combined group of forty-one cases, the ratio of females to males was 4.5 to 1. The average age was 62.8 years in two series reported elsewhere totaling thirty-four cases[7,18] as compared to 63.9 years in our series. In the same two series the symptoms of weight loss, dyspnea, congestive heart failure and auricular fibrillation, occurred in that order of frequency. In our group (Table I), the outstanding signs and symptoms were auricular fibrillation in 77.2 per cent; dyspnea 65.7 per cent; palpitation 51.2 per cent; pedal edema 42.8 per cent; weight loss 40 per cent; weakness 34.2 per cent; cough 28.5 per cent; albuminuria and palpable liver in 25.7 per cent each. The duration of symptoms varied from four to forty-two years in one series of twenty-two surgical cases.[18] In our Group I, the duration of symptoms ranged from two months to fifteen years with an average of 3.5 years as compared to six months to twelve years with an average of 1.4 years in Group II.

TABLE I. SYMPTOMS*

Symptom	Number	Percentage
Auricular fibrillation	27	77.2
Dyspnea	23	65.7
Palpitation	18	51.2
Pedal edema	15	42.8
Weight loss	14	40.0
Weakness	12	34.2
Cough	10	28.5
Albuminuria**	9	25.7
Palpable liver	9	25.7

*Six patients in Group II had insufficient data.
**Two plus or more.

Pathology

The almost uniform absence of hyperplasia and lack of knowledge regarding the biochemical nature of the secretion, makes it impossible to postulate as to the pathogenesis of the thyrotoxicosis.[9,21] The gland is usually enlarged but may be small. In our series of thirty-five cases, the thyroid was palpable in twenty-seven or 77.2 per cent. In Group I, the weight of the gland ranged from 72 to 210 gm. with an average weight of 131.7. The heart weights ranged from 310 to 440 gm. with an average of 358 gm. There was no correlation between gland size and heart weight. In Group II, subtotal thyroidectomies, the weight of the gland ranged from 10 to 157 gm. with an average of 75.1 gm.

The variation in the size of the acini with cystic acinar, colloid and epithelial degeneration, absence of hyperplasia and interstitial fibrosis are the outstanding histopathologic features.[9,18,19,21] The presence of an occasional area of hyperplasia in a predominate picture of degeneration may signify either recent stimulation or previous hyperactivity.[21] The constant finding of poorly staining colloid which assumes a basophilic character is be-

---

From the Department of Pathology, Saint Luke's Hospital, Duluth, Minnesota.

Presented at the Interurban Academy of Medicine Meeting, Duluth, Minnesota, on September 17, 1952.

TABLE II. CAUSE OF DEATH

Mode	Number	Percentage
Congestive Heart Failure	5	50
Embolic		
Femoral	2	20
Axillary	1	10
Cerebral	1	10
Pulmonary	1	10

lieved to be an altered secretion of a degenerative process and the basis for the thyrotoxicosis.[9,21]

A histologic review of our series revealed no single diagnostic criterion. The variation in the acini with cystic degeneration, flattening of the epithelium, absence of hyperplasia, poor staining colloid with basophilic tendency and interstitial fibrosis was a constant finding but is not pathognomonic of this definite clinical entity.

The mode of death in our series (Table II) was either pure congestive heart failure or an embolic episode.

Diagnosis

The willingness to accept the more common explanation for the cardiac disability, such as arteriosclerotic heart disease and/or coronary insufficiency, not only decreases the diagnostic acumen but limits the therapeutic possibilities for a remediable condition.[2]

Thyrotoxicosis should be suspected in all elderly patients with auricular fibrillation who fail to respond to the accepted form of therapy.[2,3,6,8,14,18,22,24,25,29] In a combined series of 805 cases of nodular goiter, auricular fibrillation occurred in 14 per cent of the cases.[8,25,29] A review of 2,958 cases of auricular fibrillation in the literature[14] revealed the presence of thyroid disease in about 9 per cent. This inefficient type of rhythm is present in 85 per cent of all cases of congestive heart failure associated with hyperthyroidism and is the major factor in the production of congestive heart failure in thyroid disease.[22]

The absence of the classical symptoms of hyperthyroidism is a characteristic feature. The fallacy that an increased basal metabolic rate is an essential diagnostic criterion adds to the pitfalls of an inaccurate diagnosis. The basal metabolic rate is often normal or only slightly elevated. In a series[18] of twenty-two toxic nodular goiters, the basal metabolic rate varied from a minus twelve to a plus forty-two with an average of plus twenty-eight. In a group of seventy nodular and thirty diffuse goiters with clinical evidence of thyrotoxicosis, the basal metabolic rate ranged from a minus five to a plus nineteen in 78 per cent of the cases.[9] In our Group II (Table III), the range was from minus fifteen to a plus seventy-nine with an average of plus 26.9.

TABLE III. BASAL METABOLIC RATE*

B.M.R.	Number	Percentage
—15	1	3.6
+ 5 to 10	2	7.2
+11 to 20	9	32.1
+21 to 30	8	28.5
+31 to 40	4	14.0
+41 to 50	2	7.2
over 50	2	7.2

*Not available in three patients.

A decreased circulation time, which is affected by anemia, fever, B avitaminosis and congestive heart failure, may be suggestive of hyperthyroidism but is not diagnostic. A therapeutic trial with Lugol's has the disadvantage of a lengthy period of observation and delays the use of radioactive iodine.[6]

The plasma-protein-bound iodine is an accurate determination and a value greater than 8 μg. per cent is diagnostic. A simpler test is the determination of radioactive iodine uptake. In the presence of an adequate twenty-four hour urinary output, an excretion of less than 20 per cent is considered diagnostic of hyperthyroidism.[6] Since the accuracy of this test depends on completeness of urine collection and kidney function, a low excretion should be confirmed by the plasma-protein-bound iodine.

Treatment

The end result of all untreated toxic goiters is death from heart failure.[19] To wait until the cardiovascular injury is irreversible is wishful procrastination. Non-thyrotoxic congestive heart failure and angina pectoris have responded fairly well to total thyroidectomy.[4,10,11,12,15,22,26,27] In a followup series of 208 postoperative thyrocardiacs with auricular fibrillation and/or congestive heart failure,[22] normal rhythm was restored in 71.5 per cent; 27 per cent continued to fibrillate and 1.4 per cent were completely incapacitated because of heart failure. The success of subtotal thyroidectomy in nodular goiter with cardiovascular symptoms depends on the early recognition of the disorder before irreversible cardiac damage occurs.

Summary

1. Ten instances of cardiovascular deaths from unrecognized nodular goiter are reported.

2. The outstanding symptoms in order of frequency in the combined group of forty-one patients with nodular goiter were: auricular fibrillation, dyspnea, palpitation, pedal edema, weight loss, weakness and cough.

3. The variation in the acini with cystic degeneration, flattening of the epithelium, absence of hyperplasia, poor staining colloid with basophilic tendency and interstitial fibrosis were constant histopathologic findings.

4. The mode of death in Group I was equally divided between congestive heart failure and an embolic episode.

5. The basal metabolic rate ranged from a minus fifteen to a plus thirty in twenty or 71.4 per cent of the patients and is not a reliable diagnostic procedure.

6. The early recognition of this definite clinical entity would prevent irreversible cardiac damage and death from a missed diagnosed cardiovascular disease.

Bibliography

1. Arneill, J. R.: The great importance of the thyroid in relation to certain varieties of heart disease. Colorado Med., 23:111-115 (Apr.) 1926.
2. Averbuck, S. H.: Masked hyperthyroidism as a cause of heart disease. Case reports received for publication (Oct. 24) 1940.
3. Barker, P. S.; Bohning, A. L., and Wilson, F. N.: Auricular fibrillation in Graves' disease. Am. Heart J., 8:121-127 (Oct.) 1932.
4. Berlin, D. D., and Blumgart, H. L.: The treatment of chronic intractable heart disease by total thyroidectomy. New York State J. Med., 34:1047-1051 (Dec. 15) 1934.
5. Bishop, L. F. Jr.: A review of progress in the study of the goiter heart. West. J. Surg., 48:459-464 (July) 1940.
6. Bortin, M. M.; Silver, S., and Yohalem, S.: Diagnosis of masked hyperthyroidism in cardiac patients with auricular fibrillation. Am. J. Med., 12:40-43 (July) 1951.
7. Breidenbach, L., and Appelbaum, E.: Masked hyperthyroidism. Ann. Surg., 115:184-198 (Feb.) 1942.
8. Brill, I. C.: Auricular fibrillation; the present status with a review of the literature. Ann. Int. Med., 10:1487-1502 (Apr.) 1937.
9. Chesky, V. E., and Schmidt, C. R.: Thyrotoxicosis without elevated basal metabolism. J. Internat. Coll. Surgeons, 12:238-244 (May-June) 1949.
10. Claiborne, T. S., and Hurxthal, L. M.: Results of total thyroidectomy in heart disease. New England J. Med., 216:411-417 (Mar. 11) 1937.
11. Clark, R. J.; Means, J. H., and Sprague, H. B.: Total thyroidectomy for heart disease, experience with twenty-one patients at Massachusetts General Hospital. New England J. Med., 214:277-294 (Feb. 13) 1936.
12. Cutler, E. C., and Hoerr, S. O.: Total thyroidectomy for heart disease. Ann. Surg., 113:245-259 (Feb.) 1941.
13. Ernstene, A. C., and Mulvey, B. E.: A study of auricular fibrillation following operations for goiter. Am. J. M. Sc., 158:382-387 (Sept.) 1934.
14. Evans, W. A.: Long-standing cases of auricular fibrillation with organic heart disease. Ann. Int. Med., 9:1171-1177 (Mar.) 1936.
15. Greene, A. M., and Hurxthal, L. M.: A post operative follow-up study of four hundred and sixty-nine thyrocardiac patients. Mass. Med. Soc., New England J. Med., 225:811-816 (Nov. 20) 1941.
16. Hamburger, W. W., and Lev, M. W.: Masked hyperthyroidism. J.A.M.A., 94:2050-2056 (June 28) 1930.
17. Hellwig, C. A.: The goiter. Arch. Surg., 48:27-35 (Jan.) 1944.
18. Hendrick, J. W.: Hyperthyroidism in elderly patients. Am. J. Surg., 50:466-471 (June) 1941.
19. Hertzler, A. E.: The surgical problem of the degenerative goiter heart. Am. J. Surg., 45:358-363 (May) 1939.
20. Hertzler, A. E.: Cardiotoxic goiter. J. Internat. Coll. Surgeons (June) 1941.
21. Hertzler, A. E.: Surgical pathology of the thyroid gland. New York: J. B. Lippincott Co., 1936.
22. Lahey, F. H., and Hurxthal, L. M.: Postoperative end-results in three hundred thyrocardiacs. Am. J. Surg., 24:225-231 (May) 1934.
23. Levine, S. A., and Walker, G. S.: Further observation on latent hyperthyroidism masked as heart disease. New England J. Med., 201:1021-1030 (Nov. 21) 1929.
24. Levine, S. A.: Unrecognized hyperthyroidism masked as heart disease. Ann. Int. Med., 4:67-80 (July) 1930.
25. Magee, H. R., and Smith, H. L.: Auricular fibrillation in hyperthyroidism. Am. J. Med. Sc., 189:683-690 (May) 1935.
26. Ochsner, A., and Gillespie, C.: Total thyroidectomy for cardiac disease. New Orleans Med. and Surg. J., 88:423-432 (Jan.) 1936.
27. Parsons, W. H., and Purks, W. K.: Total thyroidectomy for heart disease. Ann. Surg., 105:722-728 (May) 1937.
28. Smith, H. L.: A study of the incidence of auricular fibrillation. Minnesota Med., 15:403-406 (June) 1932.

KEEP PLUGGING "YOUR DOCTOR" FILM

Local medical societies can improve their "public relations rating" in the community by booking the "Your Doctor" film for non-theatrical showings at society meetings or to PTAs, schools, churches and other groups interested in health. Sixteen milimeter prints of this fifteen-minute sound film now are available on loan from Modern Talking Picture Service, Inc., 45 Rockefeller Plaza, New York 20, N. Y. Produced as a documentary, this film points up ways in which the medical profession has helped to bring better medical care to everyone. During 1952 more than 12 million Americans viewed the movie in over 5,000 commercial theaters throughout the country. It is hoped that medical societies will continue to promote the film locally.

PHYSICAL SYMPTOMS OF DEPRESSION

WILLIAM S. CHALGREN, M.D., Ph.D.
Mankato, Minnesota

A DEPRESSION is a serious disease. It inflicts far more pain and discomfort than do most organic diseases or injuries. A depressed patient, like a leper, may suffer years of anguish and misery, avoiding family and friends, seeking refuge behind bars and finding peace only in death. Patient after patient has said, "I would rather suffer any other kind of illness than go on this way." The disease occurs at any age of adult life; the symptoms may last from weeks to years; repeated episodes are common and the outcome may be fatal in the form of suicide.

Are the above statements overly emphasized and dramatic? I think not, especially after seeing and treating a large number of these patients. One hundred case histories of patients whose illnesses were predominately that of depression were reviewed for this presentation. The patients were seen in Mankato over a period of the last two years. They come from the farms and small towns of southern Minnesota and northern Iowa. There were thirty-five males and sixty-five females. The age range was from eighteen to seventy-two years. Seventy-eight of the one hundred patients were between the ages of thirty and sixty. The duration of symptoms before referral ranged from one week to twenty years, There were twenty-three patients whose illnesses had been present one month or less and forty-six patients with symptoms three months or less. Twenty-seven patients had been sick for a year or more.

The incidence of previous depressions was high. Almost half the group, forty-six patients, had had one or more episodes before; nine of these had two previous episodes and seven of the group had three or more previous attacks of depression. It is interesting to note that nineteen of the twenty-three patients whose symptoms had been present a month or less had experienced previous episodes of depression. The fact that they had had a similar illness before perhaps led to their more prompt willingness to have psychiatric care. There were two suicides in the group, both males, aged fifty-two and seventy-two.

Before discussing the symptoms of depression it might be in order to define the disease. Three forms of depression are commonly recognized: the depressed phase of a manic-depressive psychosis, the involutional depression, and the depression with psychoneurosis, sometimes called neurotic or reactive depression. The first two are regarded as psychoses and as such are presumably more malignant and demanding of more heroic treatment. The neurotic depressions by implication are milder, non-psychotic, and responsive to psychotherapy. In many cases, however, it is difficult to draw a line between psychosis and neurosis, and we see many cases of neurotic depression that are far more severe than are some cases of psychotic depression. Suicide may occur in all groups. Response to electric shock and other therapy seems to depend on many factors, but not on whether the depression is a neurotic or psychotic variety. It is therefore becoming increasingly evident that the above diagnostic categories are artificial, and that the management of a depressive type of illness depends not upon some specific diagnosis but upon the circumstances and dynamics of each individual case.[1] If we do not use the above categories to define depression what criteria shall be used? One of the best definitions is, "the mental state of a person who is unhappy and who is ill with his unhappiness."[3] The key point of this definition is that the person is ill. It is this fact that brings the patient to the doctor for help. And it is the recognition of the symptoms of this illness that is the concern of this paper.

In reviewing the symptoms of the one hundred patients in this study it became apparent that the cases could be separated into three general groups. In one group the symptoms were chiefly emotional and mental, and physical symptoms of ill health were minimal. Forty-five of the one hundred cases were in this group. In a second group of patients the emotional and mental symptoms were equally prominent, but in addition there were many physical complaints. Thirty-four cases were in this category. In a final group the physical symptoms were prominent and there were few overt depressive symptoms. Twenty-one patients showed this picture.

Read at the Annual Meeting of the Southern Minnesota Medical Association, Mankato, Minnesota, September 8, 1952.

Patients with predominately depressive symptoms and few physical symptoms.—There are many symptoms of depression which are obvious to everyone. The patient complains of being depressed, melancholy or blue. Crying spells are frequently present. The future appears hopeless. The patient feels worthless and "better off dead." He complains of loss of appetite and of an inability to sleep. His work is done with difficulty or not at all. He may be nervous and agitated. Guilt feelings, religious ruminations, paranoid feelings and irrational worries are frequent. The patient is usually afraid to be left alone, yet he will not leave the house. He may develop fears of harming himself or his family. Phobias and obsessions may occur. Often these patients will have few or no physical complaints except for the difficulty in sleeping and eating and an inability to work. The depressive elements of the illness overshadow minor physical symptoms. The patient often recognizes the functional nature of his illness and will say he is in good physical health. Of the one hundred cases studied, forty-five were in this group.

Case 1.—A single man, aged forty-seven, stated, "I have a bad case of melancholia." His present illness began nine months previously when he was given a new job involving more responsibility. He became depressed and quit. He cried at times. "Some days I just live on will power." He said he never felt better with respect to his physical health. He had had three prior depressions at the ages of fifteen, eighteen and twenty-three. The last one occurred at the time his mother died, and lasted three years. The patient was treated with intensive psychotherapy for a month. After an initial response he regressed and was hospitalized. After four electric shock treatments he recovered completely, and shortly thereafter returned to his new job.

Case 2.—A young married woman, aged twenty-three, with four children, complained, "I am afraid of something." Her illness began suddenly one month previously when she thought, "you are going to die young." After that she was afraid to be alone, cried frequently, became depressed, worried about sharp objects about the house and almost struck one of the children with a knife. She had no complaints about her health, though she did have several anxiety attacks at night. She had considerable difficulty in sleeping. Her past health had been good and there was no prior history of neurosis. She was seen in the office on a number of occasions and her symptoms disappeared with psychotherepy.

Case 3.—A married woman, aged fifty-six, no children, became depressed about a year previously. She developed a phobia about grease and washed dishes constantly. She had many guilt feelings over alleged sins. She cried frequently, she had occasional headaches and she complained of being tired, nervous and unable to use her mind. Her past health was good. Her menses had ceased about four years previously. After a series of electric shock treatments her phobias and depression disappeared. She has been well for over two years.

Patients with depressive symptoms and many physical symptoms.—Although we usually think of depression as an emotional and psychological illness, we know that such an illness occurs within the framework of our body. Psychosomatic medicine has taught us that all parts of this body are very sensitive to mental maladjustment. This is particularly true when the maladjustment is an emotional one. It is natural to expect then that a depressed patient will have many physical symptoms.[2] These physical symptoms can involve any organ and tissue of the body. In the present series disturbances of autonomic nerve function were most frequent, but voluntary nervous reactions were retarded as well. Pain was a most common complaint. It was localized anywhere. The patient frequently complained of pain and tight feelings in the head and back of the neck. The pain was sometimes in the eyes or ears, in the mouth, in the chest and abdomen. Often the pain was in the joints or in the muscles. Some patients said, "I have pains all over." The pains were intense or mild. They were steady or intermittent. They remained in one place or they changed locations. They were not imaginary. The patients suffered from them and were very grateful when they were relieved. Cranial nerve symptoms were frequent. They included many complaints regarding vision. Some patients had had repeated changes of glasses. Complaints of diplopia, dizzy spells, tinnitus and hearing loss were noted. A lump in the throat or a complaint of a difficulty in swallowing was frequently present.

Several patients complained of a tight feeling in the chest, of pain in the precordium or other parts of the chest, of palpitation, dyspnea, rapid heart action and inability to breath. These complaints often occurred as spells indistinguishable from anxiety attacks. We must remember that the depressed patient is an anxious patient, and many of his symptoms resemble those of an anxiety neurosis. Gastro-intestinal complaints were perhaps the most common of the physical symptoms seen in the present series of patients. Stomach pain, indigestion, an empty feeling in the epigastrium, constipation and diarrhea were frequent.

Some patients related these symptoms to their depression while others felt that they were suffering from some particular disease. Genito-urinary complaints included frequency and burning of urination, changes in the menstrual cycle, vaginal discharge, pain in the pelvic region and impotence. Many patients had general symptoms of fatigue and weakness. In two cases the complaint of hot and cold spells was prominent. Two cases of generalized dermatitis were associated with depression. Frequently the presence of these physical complaints plus the anxiety plus the depression caused many patients to interpret these symptoms as evidence that they had some incurable disease or that they were going to die. A particular symptom that has appeared in many of these patients is a sense of tightness, heaviness or constriction which is localized in the mid-line of the body anywhere from the throat to the epigastrium. It is a symptom which is very distressing to the patient. In several patients it has served as an accurate barometer of their illness, remaining as long as the patient showed any signs of depression.

The physical symptoms as listed above were prominent in fifty-five of the 100 patients studied. In thirty-four of the patients the psychological symptoms of depression were also prominent, and it was obvious in talking with the patient that the main problem was one of depression.

Case 4.—A young married woman aged twenty-six, with two children, stated, "I'm depressed all the time." Her present illness began two months previously. She made a suicidal attempt after an argument with her husband. She herself felt she had been depressed for over two years. She had severe joint pains and worried that she would be deformed with arthritis. She had many headaches. Past history revealed that she had had several prior episodes of feeling depressed. Several family members had been depressed, and there had been three suicides in the family. A diagnosis of psychoneurosis was made elsewhere and she was sent to me for psychotherapy. She failed to respond to such a program, but her symptoms disappeared after a series of electric shock treatments.

Case 5.—A man, aged sixty-four, complained of chronic "stomach pain" since a partial bowel resection twenty-eight years previously. In the last six months the distress became worse, and six weeks before referral an ulcer was diagnosed. The patient then became increasingly agitated to the point where he could not eat or sleep or do any work, make decisions, et cetera. He cried frequently. History brought out that he had retired from his farm nine months before and that he had become more and more restless since. He recovered completely after a series of shock treatments, had no physical complaints, and resumed work on the farm.

Case 6.—A woman, aged forty-eight, complained of nervousness ("I can't even sit still"), palpitation, a funny feeling in her head, eyes and neck, insomnia, fifteen-pound weight loss and depressed spirits. These symptoms came on suddenly two months before, for no apparent reason. The patient had a similar but more severe episode nine years before, relieved by Metrazol treatments. A mild recurrence developed four years ago. After a short program of office therapy her spirits improved, her symptoms disappeared and she felt she had recovered.

Patients with predominately physical symptoms and few depressive symptoms.—In twenty-one of the one hundred cases the physical symptoms of the patients' illness were emphasized and underlying depressive features were masked by the patient's complaints and his concern about them. There are many cases of mild depression in which the basic nature of the disease is concealed by the accompanying physical symptoms. Many of these patients recover either spontaneously or after the reassurance of a physical examination and of some treatment to the major physical symptoms. In some cases the treatment of the physical symptoms alters the patient's environment which in turn results in an improvement of the depression. Some of these patients are cured by faith-healers, chiropractors, changes within the family, et cetera. In some patients the depression continues and more definitive therapy becomes necessary.

Case 7.—A man, aged twenty-seven, stated his complaints as "numerous." Six months previously he developed a weakness in his legs. Later he developed pain which moved from his back to his shoulders, to his knees, et cetera. He complained of difficulty in swallowing and talking. He felt he had a clumsiness of the fingers. He had photophobia, tinnitus, dizzy spells, poor memory and a fear that he was suffering from an incurable disease. He had been referred because of possible multiple sclerosis. He admitted that he was depressed and said he had been so for about two years. He had a number of guilt feelings about his Army experiences since most of his time in the Service was spent as a student. His past health had been reasonably good except for possible pericardial effusion at the age of seven. The patient was seen over a relatively long period of time and given psychotherapy. His physical symptoms disappeared but he remained depressed. He was finally hospitalized and was given six electric shock treatments. He made a remarkable recovery and felt completely well.

Case 8.—A married woman, aged fifty-two, with no children, stated, "This is the fourth time I have had this nervous trouble." Her present episode started five months previously with a "kidney infection." She also had pains in her stomach, backache, headaches, and a funny feeling in her throat. She was referred to me by a laryngologist whom she had seen several times for her throat difficulty. Twenty-three years previously she developed abdominal pain. She went to several doctors and finally had an exploratory operation. Following this she was nervous for nine months. She was very restless, she cried, and she lost interest in everything. She finally recovered and went back to work. Ten years later she developed pain in her flanks after her husband had been called out of town. Again she became quite nervous and depressed. This illness lasted several months. Two years ago she suddenly developed pain in her chest. She was quite nervous and agitated. This illness lasted about five months. During her present illness she lost interest in everything. She felt quite depressed, she had difficulty in eating and sleeping and she went to several doctors for help. She was treated by me in the office with only moderate success. She was finally hospitalized and given electric shock treatments with considerable improvement. She had more energy and many of her complaints disappeared. She still worried about some disease in her throat.

Case 9.—A man, aged fifty-four, complained of pain in the head and neck, of an upset stomach, abdominal pain, soreness and burning of the mouth, pains in the chest, dizzy spells, sensitivity to noise and inability to work. These complaints developed about eighteen months previously. During much of that time he doctored for his stomach complaints. His illness was accompanied by some depression. He admitted that he cried frequently and that he felt blue much of the time. His past health had been good. Three years previously he had suffered from a ruptured intervertebral disc which was cured with conservative management. The patient was seen in in the office on a number of occasions. Certain changes were made in his work and he gradually responded to a program of reassurance and psychotherapy. As his spirits changed his symptoms disappeared.

Discussion.—One ordinarily thinks of a patient suffering from a depression as a patient who is melancholy, who is retarded in his thinking and actions, who often has feelings of guilt and of unworthiness and who talks of suicide. It is not emphasized that the above feelings are usually accompanied by many physical complaints, yet it is usually the physical complaints that bring the patient to the doctor. In over one-half of the one hundred cases studied there were various specific physical symptoms, and in one-fifth of the cases the physical symptoms masked the underlying depression. Several of the patients in this study were referred because of a specific physical complaint although, of course, the referring physician recognized the functional origin. In case seven for example the patient was referred to rule out multiple sclerosis. Two patients were referred because of impotence. Another patient was referred because he had lost the use of his left hand. Several of these patients had had operations during the course of their depressive illnesses. This is not unusual since patients with depressions may seek surgery in an effort to alleviate their discomfort. Many of the physical symptoms were of a neurotic or hypochondriacal nature, reflecting anxiety. We must remember that anxiety itself is a symptom of depression. In other cases the basic depression is accompanied by a general slowing of bodily function, especially that controlled by the autonomic nervous system. The patient naturally relates his illness to his physical symptoms, thus diverting his own and his physician's attention from the real condition. When the physician's history and examination indicate that the patient's complaints are functional in origin, he should make inquiry as to the possible presence of an underlying depression. Symptoms of a mood disorder will often be revealed with specific questioning. In some cases it will be difficult to decide whether the picture is one of a depression with neurotic features or of a neurosis with some depressive features. In general a depression occurs as a specific event with a definite onset and a definite change in personality, while a neurosis is more apt to be of indefinite origin and duration, and with no dramatic change from health to illness. It is important that the distinction be made, since, in case the illness is one of depression, it may be possible to effect a dramatic improvement with shock therapy.

Summary.—A depression is a malignant disease. Few diseases cause more suffering. Many cases are accompanied by a variety of physical symptoms. In some cases the physical complaints may mask the underlying depression. This may occur in either the psychotic or neurotic depression. Since shock therapy may achieve remarkable results in this disease, it is important to recognize its many features.

Bibliography

1. Ascher, E.: A criticism of the concept of neurotic depression. Am. J. Psychiat., 108:901, 1952.
2. Campbell, J. D.: Mild manic-depressive psychosis, depressive type: psychiatric and clinical significance. J. Nerv. & Ment. Dis., 112:206, 1950.
3. Lewis, A.: States of depression: their clinical and etiological differentiation. Brit. M. J., 2:875, 1938.

HERPES ZOSTER WITH MOTOR PARALYSIS

T. PAUL BLANSHARD, M.D., M.R.C.P.

Minneapolis, Minnesota

HERPES Zoster with motor involvement is sufficiently well annotated to need no more than passing comment. It may involve the cranial nerves, as in the well known Ramsey-Hunt syndrome (geniculate herpes), or the muscles of the trunk or extremities. Involvement of the abdominal wall was recorded by Taylor (1895) and recently there has been a discussion of such a case by De Dominicis (1951). Three examples of paralysis of the abdominal wall are recorded in the present report; in one the surgeon discerned the nature of the lesion and an operation was avoided, in another the protruding musculature was thought to be an abscess and aspiration was attempted.

Case 1.—S. B., a housewife, aged seventy-two years, was admitted to Fulham Hospital, London, in December 1946 on the recommendation of her local physician, who thought she might have intestinal obstruction. Five days prior to admission she had developed left sided abdominal pain which had persisted and was accompanied by vomiting. The bowels had not moved for three days until relieved by an enema just before admission to the hospital. She was a well-nourished patient who exhibited an extensive herpes zoster on the left side involving the tenth, eleventh, and twelfth thoracic segments. There was a marked resonant bulge in the lower left abdomen and paralysis of the musculature of the left side of the lower abdominal wall. The bulge was greatly accentuated by coughing. A recent photograph (Fig. 1) shows that the paralysis persists.

Case 2 (U. H. No. 824429).—J. N. K., a man aged sixty-five years, was admitted to University Hospitals, Minneapolis, in December 1950 with a diagnosis of hypertensive cardiovascular disease, coronary insufficiency and heart failure. One month prior to admission he had suffered a herpes zoster involving the lower thoracic nerves on the right. On examination in the hospital, paralysis of the lower part of the abdominal wall on the right side was observed.

Case 3 (U. H. No. 837761).—I. L. was a housewife, aged seventy-four years. This patient was referred to the Out-Patient Clinic of the University Hospitals, Minneapolis, in October 1951 for diagnosis of a mass in the right upper quadrant. She had had her gallbladder removed in 1915. Seven months prior to admission to the clinic she had developed herpes zoster in the region of the seventh thoracic segment on the right. Following this, a severe grinding pain developed in the right upper quadrant and an exploratory laparotomy was done a month later. The only abnormality found was a dilated common bile duct for which T-tube drainage was instituted and continued for two months. After operation a swelling of the right upper quadrant was noted and needled in the belief that it was an abscess. She was a well-nourished anxious woman. There was a bulging of the musculature of the upper part of the abdominal wall on the right, a bulging in no way related to operative scars. This was accentuated by straining. The scarring from the herpes was present and there was marked hyperesthesia of the involved skin.

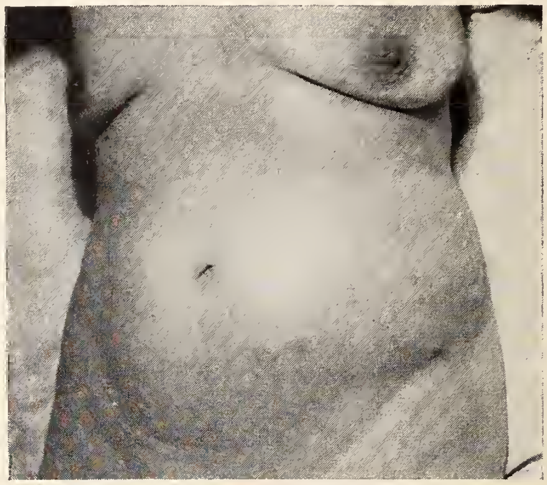


Fig. 1

The failure to diagnose *case 3* is understandable if the relationship between the onset of the rash and motor paralysis is not duly appreciated. In 25 per cent motor involvement may precede the eruption; in the remainder the interval between the rash and muscular paralysis may vary from a day to as much as two months (Taterka and O'Sullivan 1943). As far as the abdominal muscles are concerned paralysis is usually permanent.

Summary

Three cases of herpes zoster are reported with involvement of the anterior horn cells and in which the abdominal muscles were paralyzed. In all three the paralysis was permanent. The time relationship between the onset of the rash and that of motor involvement is briefly discussed.

(Continued on Page 160)

Case Report

PERFORATED INTERVENTRICULAR SEPTUM

Report of Case

DAVID V. SHARP, M.D.
Minneapolis, Minnesota

THE patient was a sixty-seven-year-old white male. On the morning of April 28, 1952, he experienced a sudden, severe substernal pain while sweeping his attic floor. He became extremely weak, began to perspire profusely and walked downstairs to his room to lie down. Whiskey and aspirin failed to give relief. The pain persisted until he experienced a sense of tightness and constriction to the point of anxiety and fear. The pain radiated down the arm to the right elbow and around the chest. The patient was immediately sent by ambulance to the hospital. After reaching the hospital, the patient had a small emesis and felt somewhat improved. The narcotic given only dulled the severe precordial pain which radiated along both arms accompanied by a sense of suffocation and breathlessness. His whole body was drenched with perspiration and he was immediately placed on the critical list.

There was no past history of hypertension. A minimal anginal syndrome had been present on effort and he had experienced slight cramps in his legs on walking rapidly. The patient's initial examination revealed him to be in shock and perspiring profusely. He was pale and slightly cyanotic while in oxygen. The pulse rate was forty-eight per minute, strong but irregular with no definite pattern. The electrocardiogram pulse was sixty per minute. The pupils were regular and equal. No thrills were noted on palpitation of the precordium. Heart sounds were of fairly good quality. The aortic second sound was louder than the pulmonary second. The blood pressure was 154/80 mm. Hg. The remainder of the physical examination proved to be essentially negative.

At approximately 5 p.m., auscultation revealed a loud systolic murmur to the left of the sternum. The pulse became more rapid and of poorer quality. The blood pressure tones heard below the cuff revealed unequal impulses and the pressure began to drop rapidly. The temperature began to rise somewhat from shock levels. There were two emeses of clear liquid. No such systolic murmur had been noted on admission.

The patient was given dicumerol, and prothrombin times were kept at a level of 25 to 35 per cent, except on May 7, when his prothrombin time suddenly dropped to 10 per cent and then rose to 23 per cent on the following day prior to death.

Clinical Course.—At no time during his hospital residence of eleven days did the patient satisfactorily improve his condition of shock. The blood pressure leveled out to approximately 100/50 mm. Hg. for five days prior to death. The pulse ranged between eighty and 100 and was of poor quality. His pain gradually subsided, and no narcotic was necessary after the fifth day in the hospital. About this time the patient began to expectorate thin bloody sputum. No other physical evidence of pulmonary disease was noted; the patient's respiratory rate was twenty, easy and not labored. The loud systolic murmur to the left of the sternum persisted and carried over into the early diastolic phase. A slight icteric tinge to the sclerae was noted on the seventh day after admission.

On the eleventh day in the hospital the patient suddenly became dyspneic and expired.

Laboratory Admission Work.—Blood: hemoglobin 109 per cent; red blood count, 5,020,000; white blood count, 16,750; neutrophils, 81 per cent; eosinophils, 1 per cent; basophils, 1 per cent; lymphocytes, 16; monocytes, 1 per cent.

Urine: amber, specific gravity, 1025; acid; faint trace of albumin; no sugar, and 4-5 red blood cells to field.

On May 8 the sedimentation rate, one day before death, was 50 mm. in one hour. An electrocardiogram taken on April 28, revealed myocardial infarcation of the anterior coronary thrombosis type.

Discussion.—Loud systolic murmurs occurring after coronary thrombosis may indicate rupture of a papillary muscle, ventricular aneurysm, or a perforated interventricular septum.

Perforated interventricular septum is usually characterized by a precordial systolic thrill and a loud murmur following an acute thrombosis. Location of the thrill and murmur is usually in the fourth or fifth interspace to the left of the sternum. The murmurs may be harsh and widely transmitted. This remains prominent despite weakening of other cardiac sounds. With a larger septal defect, a diastolic murmur is also heard, but this may also be evidence of a ventricular aneurysm. In rupture of an infarcted papillary muscle the thrill is usually absent, whereas the thrill is present in over 50 per cent of ruptured interventricular septa. In the former condition a murmur is usually heard at the apex and not along the left border of the septum. Occasionally circulatory collapse may eliminate the anticipated physical signs. The electrocardiogram is of importance in the diagnosis of coronary thrombosis, but of little value in the diagnosis of a perforated interventricular septum as the location is usually low in the septum.

Edmonson and Hoxie[1] in reporting thirteen cases, stated that they believe rupture of the heart is most likely to occur in those patients with persistent hypertension after infarction. Perforation almost always occurs within seven days of the onset of the coronary thrombosis. Few patients live longer than a month after perforation. One of thirty-six patients reported by Wood and Livezy[2] survived almost five years.

Seventy-seven cases of perforation of an infarcted interventricular septum have been reported; in twenty-nine, the diagnosis was made before death. This is probably the thirtieth case in which a diagnosis before death was made, and the seventy-eighth since the report by Zucker et al.[3]

Other pertinent autopsy data noted by Dr. H. Sanford, Pathologist of Asbury Hospital, Minneapolis, are as follows:

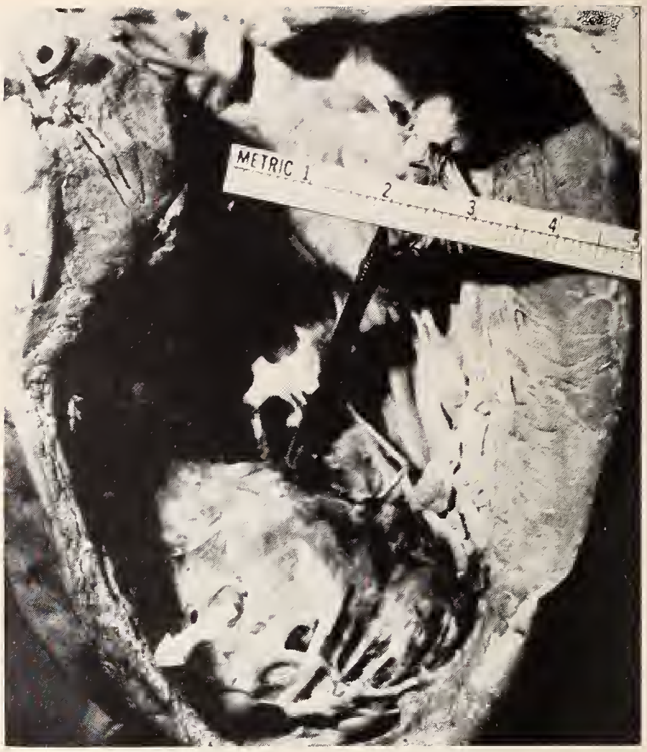


Fig. 1. (a) Perforation of interventricular septum—see forceps extending through perforation, and (b) aneurysm of ventricle (see arrow).

Thrombosis, anterior descending branch, left coronary artery.

Infarction, anterior wall, left ventricle.

Generalized arteriosclerosis: Coronary arteries, moderately severe; aorata, moderately severe; kidneys, moderate.

Atelectasis.

Chronic passive congestion, liver, spleen, kidneys, lungs.

Pericardial adhesion, anterior.

This case is interesting, not only in that an ante mortem diagnosis of perforated interventricular septum was made, but also for the presence of an aneurysm of the ventricle resulting from an anterior coronary thrombosis.

References

1. Edmonson, H. A., and Hoxie, H. J.: Hypertension and cardiac rupture. Am. Heart J., 24:719-733, 1942.
2. Wood, F. C., and Livesy, M. M.: Five-year survival after perforation of interventricular septum caused by coronary occlusion. Am. Heart J., 24: 807-815, 1942.
3. Zucker, Richard: Perforation of the interventricular septum. Arch. Int. Med., 89:899-908, 1952.

SULFOBROMOPHTHALEIN TEST OF LIVER FUNCTION

CHARLES A. OWEN, JR., M.D.

Rochester, Minnesota

THE sulfobromopthalein test of hepatic function needs no defense; it has been reported to be positive in miscellaneous hepatic diseases, particularly cirrhosis, in more than 90 per cent of cases. Also, retention of dye occurs surprisingly often in malignant disease of the liver.

Derivatives of phenolphthalein are cleared from the blood to some extent by way of the kidneys. The addition of a halogen to the molecule reduces renal excretion; the dye is then removed from the blood by the liver and is released into the duodenum through the biliary tract. The first dye used to study the function of the liver, phenoltetrachlorphthalein, leaves the blood stream slowly; in order to measure its biliary excretion stools were collected for forty-eight hours and assayed for the dye.

In 1924, Rosenthal and White found that sulfonating the halogenated phthaleins increased the rate of their disappearance from the blood; the compounds with bromine or chlorine disappeared faster than the derivatives of iodine. In animals the chlorinated dye appeared in the urine. Therefore, they chose the brominated derivative; their work led to the wide acceptance of phenoltetrabromophthalein sodium sulfonate, often called sulfobromophthalein (bromsulphalein).*

The original technique consisted of the intravenous injection of 2 mg. of sulfobromophthalein per kilogram of body weight. Thirty minutes later a sample of venous blood was withdrawn and allowed to clot; the serum was alkalinized and the presence of a reddish-purple color indicated retention of dye in the blood. The concentration of dye was determined by visual comparison with a series of standard colors. Absence of dye in the serum signified satisfactory hepatic function.

This method obviously is valid only if the clearance of dye is a function of the liver alone. Two observations support this contention: (1) in cases of biliary fistula 90 per cent of injected sulfobromophthalein appears in the externally draining bile within an hour and (2) in animals whose livers have been extirpated, disappearance of intravenously administered dye from the blood is extremely slow. The dog, unlike man, loses some of the brominated dye through the kidneys.

If the principle of the dye test is accepted as valid, the problem of dosage arises. This in turn depends on the speed with which sulfobromophthalein is cleared from the blood. It has been found that 2 mg. of dye per kilogram of body weight is cleared completely by normal persons in ten to eighteen minutes; 5 mg. of dye per kilogram is cleared in fourteen to forty-five minutes, with an average of about thirty minutes; 6 mg. of dye per kilogram is cleared in about thirty-five minutes and 10 mg. of dye per kilogram in about sixty minutes on the average.

The goal of this test, as well as any other laboratory procedure, is maximal sensitivity and a minimal number of false positive results. In the case of the sulfobromophthalein test the goals are somewhat incompatible. Thus, with a dose of 5 mg. of dye per kilogram of body weight and an allowance of only thirty minutes for the liver to clear the dye, the method would be max-

---

From the Section of Clinical Pathology, Mayo Clinic, Rochester, Minnesota.

This report includes the opinion of several members of the Section of Clinical Pathology at the Mayo Clinic and is based on experience of many years with this test at the clinic. The author wishes to express appreciation to Drs. T. B. Magath, D. R. Mathieson and F. D. Mann for advice and assistance in the preparation of the report.

*Manufactured by Hynson, Westcott & Dunning, Inc., Baltimore, Maryland.

imally sensitive, but "positive" results would be obtained in a number of normal persons. At the Mayo Clinic the attitude is conservative; the dose of 5 mg. of dye per kilogram is used but a period of one hour is allowed before the residual concentration of dye in the blood is determined. As a result, false positive results are obtained but rarely, but an occasional case of early hepatic abnormality may be missed. Others who use this dye in amounts of 5 mg. per kilogram prefer an intermediate end point, namely, forty-five minutes. Use of readings at one hour is as well justified as use of readings at forty-five minutes. The former technique simplifies instruction and handling of the patient. Those who use the smaller dose of dye, 2 mg. per kilogram, usually prefer an interval of thirty minutes between injection of dye and collection of blood.

With the advent of photoelectric colorimeters and even spectrophotometers in the clinical laboratory some have discarded the naked-eye estimation of concentration of dye in serum and substituted these electric devices because of their apparent greater precision. Since a practiced observer can evaluate the concentration of dye to within 2 per cent, the need for mechanization in routine determinations has not been established.

It is commonly considered that in the presence of jaundice the sulfobromophthalein test is inaccurate because the presence of excessive bile pigment in the blood confuses the estimation of concentration of dye. The method is practically meaningless in the jaundiced patient but not because of technical difficulties. If the jaundice results from hepatic damage the liver cannot clear the dye from the blood; if the jaundice is secondary to biliary obstruction the dye cannot be disposed of by the bile and thus is retained in the circulation. As a result the test is almost invariably positive in the jaundiced patient and has no differential diagnostic value. Two recent studies may alter this somewhat gloomy outlook: (1) in complete biliary obstruction, dye is still demonstrable in the blood after three days, while it will have disappeared in that time in the case of primary hepatic damage; (2) Zieve's group has ingeniously correlated values for retention of sulfobromophthalein with concentrations of serum bilirubin, and has suggested differential diagnostic possibilities. Further study is warranted.

A new criticism of the test, particularly when the larger (5 mg. per kilogram) dose is employed, has recently appeared. A group at Temple University found that as the excreted dye enters the intestinal tract, traces find their way back to the blood stream. However, careful investigation of this possibility has shown that the reabsorption is so minute as to be unimportant in the routine diagnostic test.

As with any procedure requiring intravenous injection, problems tend to arise. Some of these are difficulty in entering certain veins, venipunctures in children and the occurrence of reactions. Not a single fatality has occurred because of administration of sulfobromophthalein at the Mayo Clinic, although the test has been performed more than 60,000 times. Local pain occurs when the irritating dye is accidentally injected outside the vein but no necrosis or sloughing has been observed. Occasionally abdominal or precordial pain, nausea, or dizziness may occur and rarely generalized reactions, such as urticaria or asthmatic wheezing, may be encountered. Sensitization to sulfobromophthalein has not been reported.

Four observations that simplify performance of the test should not be overlooked: (1) rapid injection of the dye, rather than the recommended slow rate of injection, prevents painful venospasms and in experience at the clinic has not led to reactions; (2) no syringe or needle that has ever contained the dye should be used for the withdrawal of blood because traces of adherent dye can produce apparently positive results in the test; (3) the blood for testing should be discharged from the syringe gently, and with the needle removed to prevent hemolysis, which obscures the dye and (4) milky serum makes estimation of the concentration of dye difficult or impossible. Furthermore, it is possible that the ingestion of some types of food may temporarily alter the excretion of dye. Therefore the patient must fast before and during the test.

The simplicity of the sulfobromophthalein test for hepatic function, its need for only the most elementary equipment and the stability of the dye are factors that recommend it for general use. The dye is available readily on a commercial basis, together with properly prepared standard colors for comparison. The only additional equipment needed includes needles and syringes, tubes for the serum, a small comparator block

(Continued on Page 166)

President's Letter

A GOOD BEGINNING

Those of you who attended the County Officers' meeting of the Association, on January 17, saw the completion of one of the first and most important steps in a project initiated by the House of Delegates at the annual meeting in 1951.

I am speaking of the rural medical student scholarship award. The first recipient of the four-year scholarship was Richard L. Engwall of Winthrop, Minnesota. He will receive $1,000 each year for four years while he is in medical school.

Richard Engwall is well known in Winthrop and neighboring areas for his continuous activities in school, college, church and civic affairs. He was valedictorian of his high school class, was class president three years, helped organize and was president of the Student Council. He was interested in and took part in high school and college sports and music, singing in choral groups and receiving honors in sports.

This scholarship marks the beginning—the beginning of a different approach to the problem of maldistribution of physicians in the country.

During the height of the heated campaign against compulsory health insurance, there was little time to consider a positive approach to any of the nation's medical needs.

When the emergency began to subside, it was time to initiate a positive program of action—to show the people that doctors themselves were deeply concerned in solving medicine's problems for the good of the health of the people.

Recognizing the difficulty that rural communities are encountering in obtaining doctors, and, as one of the facets of our Minnesota program, the House of Delegates in 1951 authorized the Rural Scholarship Program. A subcommittee of the University Relations Committee worked out the details of the program and selected Richard Engwall as the first recipient. Each succeeding year will result in a new selection until we are supporting annually four young men who will locate in towns of under five thousand.

Admitting that this is only a partial answer to the problem of maldistribution, we think is a good beginning. It points a way for communities needing doctors to obtain them. As the facilities for the practice of good medicine are gradually improved in the rural areas, maldistribution may cease to be a major problem.

J Campbell

President, Minnesota State Medical Association

Editorial

Carl B. Drake, M.D., *Editor;* George Earl, M.D., Henry L. Ulrich, M.D., *Associate Editors*

PANEL PRACTICE

THE ARTICLE "Inside the British Health Plan" by Dr. James Rogers Fox of Minneapolis is written from personal experience and portrays his impressions of the panel system in Britain.

Dr. Fox is a graduate of the University of Minnesota Medical School, received his intern training at Minneapolis General Hospital and since 1948 has been a member of the University of Minnesota Medical School faculty.

At the request of Dr. Verney of the University of Edinburgh staff and as a result of his contacts with visiting faculty members from the University of Minnesota Medical School, Dr. Fox was given an appointment as a visiting staff member at the Royal Infirmary of Edinburgh and at the University of Edinburgh. During his visit, he had personal experience as a specialist and as a general practitioner in the panel system.

Another article by Dr. Fox on his experiences with medical practice in a socialistic state appeared in the January issue of the *Hennepin County Medical Society Bulletin.*

We are violently opposed to Communism and are nearly as strongly opposed to Socialism. We believe that the mistakes of others should be publicized when it comes to nations as well as to individuals, even though such action may border on the realm of gossip. We have the opportunity of learning from the mistakes of others, as well as from our own mistakes. The experiences of Great Britain, Australia and New Zealand in government-provided medical care should have wide publicity, and then if we follow the lead of these countries we shall have no one to blame for our stupidity but ourselves. These countries have found their excursion into state medicine much more costly than was anticipated, opened the way to abuses and required modification of services rendered. Also, the quality of medical care suffered. We are, therefore, happy to be able to present Dr. Fox's article as another testimony to the manner in which Socialism works when applied to medical care.

GAMMA GLOBULIN IN POLIO

SOME progress has been made during the past two years in the field of polio research. The demonstration by Dr. Dorothy Horstman of the Yale Medical School and by Dr. David Bodian of Johns Hopkins that the polio virus can be demonstrated in the blood of monkeys four to six days after it has been ingested and that antibodies are developed during this brief period opens up new possibilities. In a few monkeys, sufficient antibodies were formed to prevent paralysis, while in others the amount was insufficient or too slow in forming to prevent nerve-cell injury. In some instances, it was found to take three to seven days for paralysis to appear after the virus had been demonstrated in the blood. If during this period a slightly increased amount of antibody was added to the blood, paralysis could be prevented.

If this same sequence of events occurs in humans, it might be possible to prevent paralysis in some cases. In 1951-52, the hypothesis was tested by Dr. William McD. Hammon, Professor of Epidemiology at the University of Pittsburgh Graduate School of Public Health. Half of some 55,000 children in Utah, Texas, and Iowa were given injections of gamma globulin, the other half being given an innocuous substitute. Of the series, twenty-six cases of paralysis occurred among those inoculated, whereas sixty-four occurred in the control group. Financing of the investigation was by the National Foundation for Infantile Paralysis, with gamma globulin supplied by the American Red Cross.

Gamma globulin is not new. It has been used for the prevention or modification of measles and for epidemic jaundice for a number of years. Gamma globulin and serum albumin, which is so valuable in the treatment of shock, are obtained from the same pooled blood which is an important consideration as it is important that the blood contain antibodies for the several polio strains.

In view of the above facts, it seems as though something of distinct value has eventually evolved in the prevention of paralysis from polio.

At the request of the Office of Defense Mobilization, the American Red Cross has signified its willingness to expand its production of gamma globulin for free distribution with the proviso that some other agency take the responsibility of distributing the product.

Inasmuch as it takes over a pint of blood to provide the gamma globulin for one injection and an injection loses its effectiveness after five weeks, the required expansion of the Red Cross Blood Banks will be terrific. The annual campaign which will be conducted as usual in March will ask the public for 93 million dollars, which includes a necessary increase of 7 million to provide for this expansion.

Vaccination against polio will have to be limited to epidemic areas which may mean 150 of the 3,000 counties in the country. It is estimated that 2 million children will be exposed this year and each child may require two inoculations. It may as well be appreciated by the public that it is impossible for the Red Cross to expand its facilities fast enough to provide the gamma globulin which will be requested or demanded by frantic parents. The amount made available ultimately will also be dependent on the generosity of the public in the matter of dollars and blood.

The proof of antibody formation to polio infection, and the fact that infection with polio virus is much more widespread than the number of paralytic cases indicates, rationalizes the use of gamma globulin in an effort to reduce the havoc caused by the disease. The practical demonstration of its effectiveness justifies the extension of its use. It is within the realm of possibility that a vaccine may be developed before very long which will produce an active and long-lasting immunity to the disease.

PUBLIC RELATIONS AND THE MEDICAL PROFESSION

ON November 30, 1952, the day preceding the opening of the AMA Clinical Session in Denver, the Public Relations Department of the AMA held an all-day session at the Shirley Savoy Hotel. This was the fifth yearly PR meeting held, and if attendance is any criterion, interest in the meeting has been progressively increasing from year to year.

Public relations will always demand consideration on the part of most industrial or professional groups including physicians, human nature being what it is. Such a momentous change as that about to take place in Washington will not relieve the medical profession of the need for improving its public relations. It cannot be emphasized too often that the individual physician has the opportunity of being the best possible public relations agent for the profession. A physician who gives his best to each patient and bears in mind the Golden Rule is doing his part to better the public relations of his profession.

County, state and national medical organizations can and are contributing to the betterment of public relations. In 1948, there were about sixty emergency call stations in the country. The number was increased to some 650 by 1952. The number of county societies having mediation committees (formerly grievance committees) is also on the increase.

At the Denver meeting emphasis was placed on the key position held by the office assistant. A skit put on by a group of University of Colorado actors was illustrative. Too often physicians know little of what goes on in their reception rooms. A few years ago the State Medical Association of Iowa employed a field worker to explain Blue Cross and Blue Shield forms to office assistants and to instruct them in such fundamentals as answering the telephone and greeting patients. The office assistant is in a position to establish the whole tone of the office for better or for worse. The AMA pamphlet entitled "Winning Ways with Patients" contains some valuable suggestions for office assistants.

The physician is in a position to better the public relations of the hospital. He can prepare the patient for the shock of the first hospital bill by explaining that the rate for the room does not cover all the services rendered by the hospital but that such items as operating room, laboratory, anesthesia, x-ray and private nursing are extra.

The hospital needs this help. One hears considerable criticism of the high cost of hospital care and comparison is made with the cost of a hotel room today. It is forgotten that meals brought to the patient's room are included in the room rate and that floor nursing care in some hospitals amounts to as high as 38 per cent of the overhead. Some 500 hospitals throughout the country have distributed the AMA pamphlet entitled, "Your Money's Worth in Health," to their patrons in the interest of better public relations.

It was startling to hear that a group of young doctors in a western state a few years ago had shown an antipathy towards the American Medical Association. What grievance, actual or imagined, they had we do not know. When we consider that the AMA is composed of the state medical associations which in turn comprise the county societies and that the officers of the AMA are the men chosen by the representatives of the state associations it is difficult to understand such a situation. The formation of the Students' American Medical Association should do much to direct the medical students in the way they should go. The medical student of today, to some extent, is exposed to socialistic influences by professors who, consciously or unconsciously, instill in their minds socialistic ideas in relation to medicine.

The few members of the profession who overcharge for their services, insist on payment in advance of an operation, fail to provide for night calls, make unnecessary professional calls, operate unnecessarily and otherwise violate the Golden Rule give a black eye to their profession and counteract, to a large degree, the esteem in which most members of the profession are held by the public.

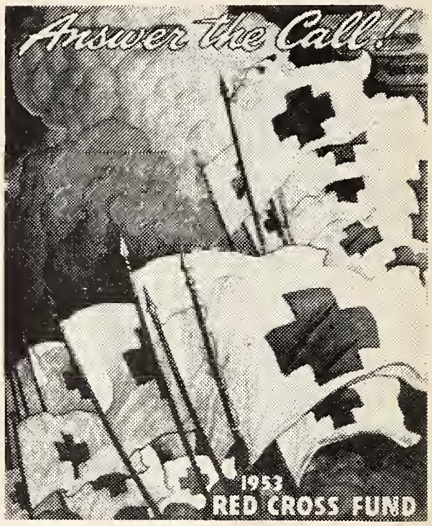
DR. DUBLIN RETIRES

Dr. Louis I. Dublin, statistician of the Metropolitan Life Insurance Company, whose name has become almost synonymous with life insurance statistics, retired at the end of the year 1952 after forty-four years of service. He joined the company in 1909. Two years later he organized the Statistical Bureau and has been its chief ever since. His contributions on mortality, morbidity, longevity and other subjects have been invaluable to Life Insurance underwriting and administration.

Dr. Dublin's time was not entirely spent at a desk, working over figures. He served at times as president of the American Public Health Association and chairman of the Board of Directors of the American Museum of Health which created the Hall of Man in the New York World's Fair of 1939-40. Much of his time has also been devoted to other activities which include the Bureau of Census, the Public Health Service, the National Research Council, the American Cancer Society, the National Tuberculosis Association, the National Health Council, the New York Tuberculosis and Health Association, and the Welfare and Health Council of Greater New York.

In 1944, Dr. Dublin was granted temporary leave to devote his full time as Assistant to the Chairman of the American Red Cross in Washington. During World War I, he was a member of the commission of the American Red Cross which was sent to Italy and the Balkans. As a result of his visit to France in 1945, a comprehensive program of relief was carried out by the American Red Cross for the children of France.

Dr. Dublin possesses that rare combination of scholar and practical administrator. His writings have been voluminous. It is hoped that his contributions to the welfare of mankind will not terminate with his retirement from the Metropolitan, but will continue for many years.



HERPES ZOSTER

(Continued from Page 152)

I am grateful to Mr. Charles Cochran, surgical specialist at Fulham Hospital, London, for permission to record Case 1.

References

Taylor, F.: A case of shingles followed by paralysis of the abdominal muscles. Guy's Hosp. Rep. London. 52:37-43, 1896.

De Dominicis, G.: Herpes zoster e paralisi motoria dei muscoli della parete addominale. Minerva Med. Torino, 42:157, 1951.

Taterka, J. H., and O'Sullivan, M. E.: The motor complications of herpes zoster. J. A. M. A., 122:737 (July 10) 1943.

AMERICAN MEDICAL ASSOCIATION

Summary, Clinical Session

Denver, Colorado, December 2-5, 1952

The House of Delegates convened Tuesday, December 2, in Denver, Colorado. After the preliminaries, including the invocation and the report of the Reference Committee on Credentials, Dr. James R. Reuling, presiding as Speaker for the first time, introduced Dr. Louis H. Bauer of New York, President of the American Medical Association, and the meeting got under way.

In his presidential address, Dr. Bauer noted that there appears to be less danger, now, than for a number of years, of general socialization of medicine in the United States. But he listed a series of tasks which must still be accomplished if the American system of medicine is to be preserved, including the following: (1) work with rural communities to establish adequate facilities for physicians; (2) see that good medical care for the indigent is available everywhere; (3) extend public health coverage to all areas now lacking it; (4) develop plans for care of the chronic invalid; (5) expand the voluntary insurance program to cover more persons and also to cover persons over sixty-five and those suffering from illness of long duration; (6) clean the house of medicine by discipline of unethical physicians; (7) see that the services of a physician are always available; (8) revitalize county medical societies to make them leaders in all community health projects; (9) indoctrinate newly trained physicians in traditions and ethics.

Following presentation of President-Elect Edward J. McCormick of Toledo, Ohio, of Mrs. Ralph Eusden, President of the Woman's Auxiliary and of Mr. Clifford Vernick of Tufts Medical College and Mr. Leland Hoar of the University of Oregon Medical School, both representatives of the Student American Medical Association, reports of the Secretary, Dr. George F. Lull, and the Chairman of the Board of Trustees, Dr. Dwight H. Murray, and reference committee reports were given. Recommendations on these and other resolutions and reports gave rise to the following discussions and enactments:

"Commercialism" Lashed

Appointment of a committee was ordered by the House to work with the Advisory Board on Medical Specialties on development of means to increase the number and distribution of general practitioners. President Bauer declared, as a preliminary to this action, that the present system of channeling men into specialties virtually prevents general practitioners from ever becoming specialists and thus keeps the number of doctors going as general practitioners into rural areas far short of the need. He suggested that general practice be established as one of the prerequisites for a majority of the special fields.

In response to Dr. Bauer's sharp criticism of what he termed "commercialism" in the practice of medicine, the House recommended that "state associations be adamant in disciplining unethical members, that they require more rigid ethical standards for membership, that medical schools provide training in the ethics and traditions of medicine and that the House go on record as thoroughly disapproving any business arrangement between pharmacists and physicians."

The Doctor Draft

After a stormy session in committee, the following position on the doctor draft law was adopted and approved without debate on the floor of the House. The Council on National Emergency Medical Service was instructed to continue to support legislation "to provide the number of medical officers required to care adequately for the health needs of the uniformed armed forces," but on these conditions:

1. Revision of physical requirements for medical officers so that physicians with physical defects will be placed on military duty with appropriate assignments.
2. Development of better recruitment methods by the Armed Forces for regular Medical Corps personnel.
3. Greater use of civilian doctors and hospital facilities for care of both military and non-military personnel.
4. More economical and efficient use of physicians in all government agencies.
5. Establishment of more uniform "conditions of service" among the several government agencies to put an end to "undue competition" for medical personnel.

Care of Civilian Dependents

Especially, the involuntary call-up of physicians for the care of civilian dependents of servicemen was hotly opposed in the debate on the doctor-draft. The Council on National Emergency Medical Service has consistently contended that too many military physicians are being used for the care of civilian dependents. The answer of the Armed Forces was that only 8 per cent of all in-patient care and 20 per cent of all out-patient treatments stem from care of dependents, although the Deputy Surgeon General of the Army admitted that "approximately 60 per cent of dependents of Army personnel are being so cared for." The military contends that it must provide care for dependents overseas and in isolated areas of the United States and that its research, intern and residency programs and recruitment appeals get much of their strength from the fact that all types of patients can be seen by military surgeons.

For Special Pay

Further action on the doctor draft took the form of a resolution urging the President of the United States to defer any call-up of Priority III physicians until Selective Service and the Department of Defense have completed call-up of all physicians in Priorities I and II, except for the occasional individual who is considered essential.

The House also re-affirmed its approval of the $100 special pay for physicians and dentists in the Armed Forces and urged an early meeting of state chairmen of advisory committees to get their thoughts on future doctor-draft legislation.

Medical Service for Veterans

The general question of medical care for veterans with non-service-connected disabilities was also warmly debated. Eventually, the recommendation of the Special Committee on Federal Medical Services, also known as the Martin-Henderson committee, was rejected. This recommendation called for new legislation limiting medical and hospital benefits for veterans in Veterans Administration facilities, to veterans with service-incurred or aggravated disabilities and veterans with tuberculosis and neurological conditions who are unable to pay for treatment.

Dr. Norman Booher, Vice Chairman of the National Rehabilitation Commission of the American Legion, said he believed that Public Law 312 defining eligibility for admission to Veterans' Hospitals should not be tampered with in Congress, though he also felt that there was entire agreement between the Legion and the medical profession as to the desirability of eliminating "chiselers." He believed there should be enforcement of the present law by administrative action rather than by new legislation. Dr. Joel T. Boone, medical director of the Veterans Administration, also felt that the House should not vote hurriedly on the recommendation.

As a result of the discussion, the House adopted a recommendation that the American Medical Association, the American Dental and Hospital Associations, the Veterans Administration and the Department of Defense should "sit down and try to reach reasonable conclusions for appropriate action from agreed upon data rather than to take any precipitate action now."

Other recommendations of the Martin-Henderson committee asking for congressional study as to whether provision of medical and hospitalization benefits for dependents of service personnel is a "proper and desirable emolument of military service" and endorsing the present policy of transferring seriously disabled service personnel from service hospitals to Veterans Administration installations, were accepted.

Care for the Indigent

Among other important actions of the House were the following:

Physicians were urged to provide medical care for anyone unable to pay for it and county and state medical organizations were urged to implement this principle.

Significant alterations, emphasizing educational aspects of intern training, were adopted for approval of hospitals for internships.

Creation of a federal department of health with cabinet status was again recommended. But the House decided there was no need for an American Medical Association health commission comparable to the President's Health Commission since the various councils and commissions already established are now engaged in doing the job.

For Tax Relief

American Medical Association efforts were endorsed to achieve tax relief for physicians by making expenses of postgraduate education deductible for federal income tax purposes; by allowing physicians to set aside retirement funds from current income without paying taxes on such funds until the benefits are received and by other measures.

A committee was instructed to consult immediately with the American Osteopathic Association concerning use of physicians as instructors in osteopathic schools.

The House also opposed use of prisoners for scientific experiments as a means of gaining clemency. And it recommended withdrawal of the United States from the ILO (International Labor Organization) of the United Nations on the basis that ILO is socialistic and its action could supersede the United States Constitution.

Contributed $500,000

The House contributed $500,000 to the American Medical Education Foundation for support of medical schools. It urged that the meager existing supply of gamma globulin be conserved for civilian use.

It made a large number of changes in form in the Constitution and By-Laws of the American Medical Association in accordance with a directive of 1952 and in the interest of streamlining and modernizing the document and it asked all of the states to explore the precise role of government in the provision of medical service in their states.

Dr. John Mastin Travis of Jacksonville, Texas, was named General Practitioner of the Year.

(Continued on Page 163)

THE MINNEAPOLIS DIABETES DETECTION CAMPAIGN—1952

The most successful of three Diabetes Detection Campaigns was experienced in Minneapolis during the November, 1952, drive.

It was felt that the two previous years had brought outstanding success to this endeavor, participated in by the Twin Cities Diabetes Association, Hennepin County Medical Society, Twin City Retail Druggists Association, and the Minneapolis Health Department. But 1952 exceeded all expectations for response by the public. The 1952 campaign is also noteworthy as the the first year the Dreypak strip method was used in testing.

Total specimens in the three consecutive years and results of testing were:

Year	*Total Specimens Submitted*	*No. Screening Positives*
1950	24,354	534
1951	14,015	258
1952	32,063	657

Each year careful planning by the participating agencies has started months in advance of the November Detection Week. Organization for operation, including collection of specimens, laboratory testing, and reporting to patient and physician; organization for publicity via press, radio, and television, posters, and leaflets; organization for tabulating and evaluating test results and necessary follow-up were all revealed each year again and again to bring about smoothest operation.

Very important to the success of the campaigns was the splendid co-operation of the local press and other media of communication.

In the first two years when liquid urine specimens were accepted, some daily laboratory procedures had to be suspended in the Health Department laboratory where all testing was done during Detection Week. Also, additional technical help had to be sought outside the laboratory staff. In all other phases, the work was absorbed within the normal resources of the Health Department. In the first campaign, only established collection stations of the Health Department were used for collection of specimens. In the two succeeding years, all drug stores of the city became collecting depots, and assistance in collection from these additional stations to the laboratory was given by the Twin City Retail Druggists Association.

Use of the Dreypak strip test method in 1952 greatly simplified the work in the laboratory. This method, authored by Drs. Norman Drey and William H. Olmsted of St. Louis, Missouri, was found on preliminary testing and during the campaign to be as satisfactory as the former methods. Minneapolis served as a pilot study in use of this method for the American Diabetes Association. Through its use, the time-consuming handling of liquid specimens in their original containers of assorted shapes and sizes, their numbering serially with matching number on test tube, to say nothing of disposition of urine and containers after the test had been completed, were all eliminated. In the first two years, the need for processing the liquid specimens as quickly as possible required long hours of work, even into the early morning hours. This was not necessary with the Dreypak as the specimens do not deteriorate rapidly. Aside from the necessary opening of envelopes in which the strips were submitted and serially numbering the strips, the actual laboratory procedure on each strip was only a matter of seconds. At the peak of the load, one technician comfortably processed 7,000 strips in the normal work day.

The participating agencies in Minneapolis are very happy with the results of the 1952 Diabetes Detection Campaign in which the Dreypak method played an important part.

Details of the method and results of follow-up are being prepared for release through the American Diabetes Association. From experience in Minneapolis, it would seem that the Dreypak strip method is well suited for mass testing of urine specimens for the detection of sugar.

AMA CLINICAL SESSION

(Continued from Page 162)

Dr. Travis has practiced medicine for forty-five years in Texas and was called by Dr. Dwight H. Murray, Chairman of the Board of Trustees, who presented him, "a man who exemplifies the best in our system of free enterprise."

Future Meeting Places Named

Plans outlined by the Council on Scientific Assembly for future meetings were approved. They included the New York annual session scheduled for June 2-5, 1953, the clinical session at St. Louis in December, 1953, and the annual session in San Francisco in June, 1954. The clinical session for 1954 will be held in December in Miami.

After a unanimous vote of thanks to the local committee on arrangements, to the Denver Medical Society, the Colorado State Medical Association and their Auxiliaries for the entertainment of the delegates and their wives, the House of Delegates adjourned on Thursday, December 4, 1952.

J. Arnold Bargen, M.D.
O. J. Campbell, M.D.
George Earl, M.D.
F. J. Elias, M.D.
Delegates to AMA

Medical Economics

**Edited by the Committee on Medical Economics
of the
Minnesota State Medical Association
George Earl, M.D., Chairman**

HOSPITAL ACCREDITATION GROUP ISSUES PROGRESS REPORT

The Joint Commission on Accreditation of Hospitals, charged with the job of carrying on the hospital standardization program conducted by the American College of Surgeons since 1919, has recently issued its first bulletin, containing information on the group's problems and progress since September 1, 1952, when it opened its office in Chicago.

The joint commission has five member organizations and each has a certain number of votes on the commission: The American College of Physicians, three votes; the American College of Surgeons, three votes; the American Hospital Association, seven votes; the American Medical Association, six votes; and the Canadian Medical Association, one vote.

Dr. Edwin L. Crosby, director of the joint commission, states in the first bulletin that one of the first actions taken by the Board of Commissioners of the Joint Commission was the adoption of the program of the American College of Surgeons. He states that a "Grandfather's Clause" was also established which provides that "the Joint Commission will accredit all hospitals for the year 1953 which, at present, have full approval of the American College of Surgeons."

The commission also promises that "accreditation will be continued until an inspection of the hospital under the new Joint Commission program has been made."

Present Standards Retained

The second part of the Grandfather's Clause states that for the present the standards as well as the point rating system developed by the American College of Surgeons will be used as a basis for approval of hospitals. However, Dr. Crosby reports, "as the Joint Commission's program progresses, forms and procedures may be changed. In fact, the JC's Board of Commissioners intends to review the standards critically and, where needed, to make helpful changes."

The Commission bulletin emphasizes that the basic principle of good patient care in hospitals—which has been the criterion for approval during the years the program was under the sponsorship of the American College of Surgeons—will remain intact.

Surveys Outlined

The Joint Commission will assume all responsibility for the accreditation of hospitals on or before January 1, 1953. Actual surveys of hospitals will be conducted as follows:

> "Inspections of hospitals will be conducted by surveyors employed by the member associations of the Joint Commission. At this writing, three of the five associations will have surveyors available for field work by the first of the year. These three groups are the American College of Surgeons, the American Medical Association and the American Hospital Association."

The bulletin emphasizes this fact:

> "Although the survey will be made by representatives of these associations, the actual findings will be submitted to the Joint Commission for evaluation and subsequent accreditation or non-accreditation. In other words, all action on accreditation will be taken only by the Board of Commissioners of the Joint Commission . . . regardless of which particular member association does the inspection of an institution—all decisions on accreditation will be made only by the Joint Commission."

Significance Cited

Dr. Crosby noted awareness of the tremendous significance of this new undertaking. He quoted Dr. Gunnar Gundersen, the Commission's chairman, who said:

> ". . . It is a voluntary movement representing the best thinking and the best inspiration of five of the most powerful groups in the world dealing with health. . . . We recognize what this will mean to the care of

the sick and injured of two friendly nations, Canada and the United States.

"If our duties are discharged well, the benefits to mankind through our profession, through our hospitals, and for our civilization are unreckonable."

By-Laws State Purposes

The purposes of the Joint Commission on Accreditation of Hospitals are stated emphatically in the Commission's thorough set of By-Laws. These purposes are:

> "(a) To conduct an inspection and accreditation program which will encourage physicians and hospitals of the United States and Canada voluntarily:
>
> (1) to apply certain basic principles of organization and administration for efficient care of the patient; (2) to promote high quality of medical and hospital care in all its aspects in order to give patients the greatest benefits that medical science has to offer; and (3) to maintain the essential diagnostic and therapeutic services in the hospital through co-ordinated effort of the organized medical staff and the governing board of the hospital.
>
> "(b) To establish standards for hospital operation.
>
> "(c) To recognize compliance with standards by issuance of certificates of accreditation.
>
> "(d) To assume such other responsibilities and to conduct such other activities as are compatible with the operation of a hospital accreditation program."

EDITOR HITS "FEDERAL THOUGHT CONTROL"

"Our federal government today employs two methods in the attempt to control the press." An editor of a Southern newspaper made that statement recently when speaking before a meeting of the Florida Medical association.

Virgil M. Newton, Jr., managing editor of the *Tampa Morning Tribune,* spoke on "Federal Thought Control, a Challenge to American Liberties and Freedom," and named the two methods for controlling the press as:

1. Direct and outright censorship. Mr. Newton stated that the best example of this is the censorship of income taxes.
2. Propaganda, which is nothing more and nothing less than attempted thought control. Mr. Newton said, "And it is in this field that our government has waged its campaign for socialized medicine."

He went on to point out that today, according to the Congressional Record, "the federal government is spending $100,000,000 a year for its press releases, prepared by 50,000 government press agents, and $200,000,000 a year for the printing of these releases. That is a total of $300,000,000 a year for federal propaganda."

Explains Methods

Describing how the system worked in the socialized medicine issue, Mr. Newton stated:

> "In 1945, President Truman sent a message to Congress calling for a national health insurance program which was nothing more than socialized medicine. Shortly afterwards, the Surgeon General of the United States Public Health Service sent a letter of instructions to all employes of that government agency. One paragraph of that letter read as follows: 'Every officer of the Public Health Service will wish to familiarize himself with the President's message and will be guided by its provisions when making any public statement likely to be interpreted as representing the official views of the Public Health Service'."

Another official of the Public Health Service, quizzed by a House committee as to why the propaganda issued by his agency supported socialized medicine, replied:

> "We would naturally give emphasis to that, because that is why we are in the government. Otherwise, we should get out of the government."

Commented Mr. Newton:

> "This is a strange concept coming from a public servant of a so-called Democracy . . . implied that if you do not favor socialized medicine, then you have no business in the government. He further implied that it was perfectly all right for a government official to spend taxpayers' funds in pushing our republic down the road to socialism, even though Congress at no time approved any policy favoring socialized medicine or had appropriated funds for such propaganda."

Agencies Issue Material

Mr. Newton reported further that over the years, hundreds and hundreds of pamphlets, booklets and press releases were issued by the Social Security Board, the Public Health Service, the Children's Bureau, the Office of Education, the U. S. Employment Service and the Department of Agriculture, all of which materially supported national health insurance. He cited one pamphlet which said, "You can write a letter to the Readers' Column of your local newspaper, tell your editor why the readers of the paper should back the national health insurance."

Workshops Noted

Among other methods used to foster socialized medicine, Mr. Newton told Florida doctors that the propaganda campaign centered around the "Health Work Shops" which were held in Washington and in other parts of the country. These workshops were conducted by a dozen or more federal security officials who would meet with many carefully selected persons and thoroughly indoctrinate them with socialized medicine views. They would then urge them to conduct smaller local meetings and to spread the word "in such a fashion that a wave of pro-socialized medicine public opinion, even though it be false, would be generated and would sweep across the country and engulf Congress."

Fortunately, however, the opposition to government-controlled medicine grew ever faster, and mounted to sufficient force to let Congress know that Americans wanted no part of it. It is hoped that such propaganda releases from government agencies will be put to a stop now that an administration is in power which is known to oppose government interference.

COMMUNIST LOGIC FALLS SHORT

An interesting observation was seen lately in an advertisement from a manufacturer of machine tools, textiles and machinery. The ad was headed with a quote from the writings of Karl Marx, father of Communist teachings: "From each according to his ability; to each according to his needs." The ad then proceeds to tear apart this basic Communist tennet:

> "A noble sounding philosophy, isn't it?
> "So you take half the bees' hard-earned honey, and give it to the wasps who have spent the summer having an easy time.
> "So half the bees starve to death but the wasps learn to like free honey (there is a special type of wasp that does!) and are now so well fed that they multiply in strength and numbers."

Concluding, the advertisement says:

> "Now they've had a taste of soaking the rich, of 'sharing the wealth'—so they refuse to do any work, and demand *all* the bees' harvest. The now-outnumbered bees try to refuse but the wasps seize the honey, eat it all, and let the bees, who gathered it, starve.
> "So pretty soon you have no industrious bees, and the place is swarming with wasteful, useless wasps.
> "Tough on the bees. And on the world.
> "But such a sweet philosophy!"

LABORATORY AIDS

(Continued from Page 156)

and a 10 per cent (not 0.1 normal) solution of sodium hydroxide to alkalinize the serum and bring out the dye. It is better to use a source of artificial light, such as a fluorescent tube, so that the intensity of illumination is uniform and not variable, as is natural light.

In view of the ease of performance of this test, its freedom from complicating reactions and the valuable information it may provide relative to the state of the liver in nonjaundiced patients, it is surprising that the technique does not enjoy more widespread application.

* * *

This is the second of a series of editorial reports published under the auspices of the Minnesota Society of Clinical Pathologists. As stated in the preceding issue of MINNESOTA MEDICINE, the purpose of these reports is to bring to mind aids to the practice of medicine that may be expected from the wider and more correlated application of laboratory science. Again it should be emphasized that the pathologist is a consultant physician whose specialized knowledge covers a large fraction of medical practice. If this knowledge can be applied to further the welfare of the patient, the pathologist is glad to supply it when he is sought out by the practicing physician. The Society welcomes such consultation and its members are glad for a chance to help resolve any problems that may face the medical practitioner.

In most cases, reprints of these reports will be available from either the author of the individual report or the chairman of the editorial committee of the Society. The members of the editorial committee, Dr. Arthur H. Wells of Duluth and Drs. Arthur H. Sanford and George G. Stilwell of Rochester, welcome any suggestions regarding these presentations.

George G. Stilwell, M.D.,
Chairman, Editorial Committee

"A DISEASE WHICH HAS NO FRONTIERS"

A recent British writer designates tuberculosis as "a disease which has no frontiers." Quarantine cannot be used against it as is possible in foci of plague, cholera or yellow fever. Segregation in sanatoria is our best substitute. But even this has its drawbacks. First, there are not enough beds; second, discharge against advice is still current, releasing infectious cases again into circulation.—KENDALL EMERSON, M.D., *Connecticut State Medical Journal*, May, 1952.

Minneapolis Surgical Society

Meeting of October 1, 1952

The President, Hamlin Mattson, M.D., in the Chair

PANCREATITIS COMPLICATING COMMON DUCT SURGERY

VIRGIL J. P. LUNDQUIST, M.D.

Minneapolis, Minnesota

In 1899, Reginald Fitz,[6] writing of acute pancreatitis, stated, "at first sight, the etiological importance of gallstones seems immediate" and "these cases (of pancreatitis) would suggest that these affections were more important from the associated inflammation of the mucous membrane with its opportunity of extension into the pancreatic duct than from the actual or possible perforation of the biliary canal." There are many other interesting historical milestones in the development of our present thoughts concerning pancreatitis. In 1856 Claude Bernard[12] first produced pancreatitis by injecting bile and sweet oil into the pancreatic duct of a dog and caused death in eighteen hours from acute hemorrhagic pancreatitis. Lancereaux[12] in 1899 was the first to suggest that regurgitation of bile into the pancreatic duct might be the cause of pancreatitis in humans. Opie in his classical description in 1901 presented the autopsy evidence of a case of acute hemorrhagic pancreatitis with a stone lodged in the ampulla of Vater.[15] Archibald in 1919 caused pancreatitis in animals by forcing ox bile, human bile and bile salts into the gall bladder under high enough pressure to cause sphincter spasm of the Sphincter of Oddi.[2] This caused the material to be forced back into the pancreatic duct and lead to the development of pancreatitis. He advocated the term pancreatic necrosis since the essential lesion was one of necrosis.

Cameron and Noble,[3] in 1924, using fresh specimens, were able to demonstrate a communication, or common-channel, between the common bile duct and the main pancreatic duct in 74 per cent of their cases. Wangensteen, Leven and Manson,[18] working with cats in 1931, ligated the ampulla and injected air into the gall bladder. This caused a contraction of the gall bladder and a reflux of material into the pancreatic ductal system and a resultant pancreatitis. They concluded that there was a combination of factors working together to cause pancreatic necrosis. Howard[9] has made the statement that there is no definite etiological agent for pancreatitis which is common to all of the cases. C. W. Howell, working at the Minneapolis Veterans Hospital, demonstrated a direct relationship between an elevated serum amylase and filling of the pancreatic duct by cholangiography. In postoperative patients with choledochostomies and T-tubes, he demonstrated that filling of the pancreatic duct was associated with an elevated serum amylase in over 80 per cent of the cases.[12]

From all of these reports we arrive at the conclusion that the common-channel is one of the important factors in the development of pancreatitis. The frequent association between disease of the biliary tract and pancreatitis is one of common knowledge. This association occurs in as high as 70 per cent of the cases of pancreatitis.

It is now generally accepted that the pathological process in pancreatitis is due to the escape of pancreatic enzymes into the gland substance, into the surrounding tissue or into the blood stream. How this escape occurs or how it is initiated is not entirely clear. There is either, (1) an obstructing mechanism within the ducts leading to an escape of inactivated trypsinogen into the tissues where it is activated leading to further digestion, necrosis, and hemorrhage; or (2) there is a reflux of duodenal contents or bile which activates the trypsinogen and leads to trypsin and its subsequent digestive action on the duct, surrounding tissue, and vessels; or (3) there is a traumatic release of the enzymes into the surrounding tissues. It has been demonstrated that there must be a venous absorption of enzymes into the blood stream and that probably a good share of the toxemia associated with pancreatitis is due to the hepatoxic effects of the high amylase content in the portal venous system.[11]

Since the common-channel is important for the development of pancreatitis and since this anatomical arrangement is present in a high number of individuals, it is gratifying that more postoperative cases are not encountered. The many times that the common bile duct is explored for stones by probing and instrumentation would lead one to expect that trauma in the region of the common-channel would precipitate pancreatitis with a much higher frequency.

Pancreatitis is not a frequent complication of biliary tract surgery. Von Schmieden and Segening[19] reviewing 2,137 cases of pancreatitis in which there were 1,278 cases of pancreatic necrosis, found only thirty-eight cases of pancreatitis following biliary tract surgery. In these there were only nine following supraduodenal choledochotomy. Colp and Ginsburg,[5] reviewing 130 autopsies in cases of surgical diseases of the biliary tract, found six cases where pancreatitis

---

Inaugural thesis presented before the Minneapolis Surgical Society, October 1, 1952.

was the cause of death for a percentage of 4.5 per cent. Although the frequency is not great, as will be noted from the cases presented, the prognosis is most unfavorable. It appears that the anatomical arrangement is of some importance for the development of pancreatitis. Two requisites have been advanced for regurgitation.[10] The common-channel must be present or anatomically possible and long enough (at least 5 mm.) to give obstruction to the orifice without obstruction to the ducts. The pressures must be such that the direction of flow is proper. This latter requisite of proper pressures is dependent on whether the main pancreatic duct communicates with the accessory duct or not and whether the duct is patent. Since the duct of Santorini has no sphincter at its orifice in the duodenum, the greater pressure in the duct of Wirsung as compared to the pressure in the common bile duct can be nullified if the duct of Wirsung and Santorini communicate with one another. It has been found that 46 per cent of cases have communications between the ducts of Wirsung and Santorini. This of course gives an avenue of escape to the pancreatic secretion if the main pathway is blocked at the ampulla of Vater.

Various reasons for exploring the common duct at the time of operation on the biliary tract have been promoted.[1] Whether these indications are preoperative such as jaundice, chills, fever, frequent colic, severe nausea, or others; or whether they are operative such as small stones or sand, palpable stones in the duct, contracted gallbladder, or abnormal appearance of the bile, nevertheless numerous ducts are constantly being explored. It is usually thought judicious that drainage of the common duct be done following exploration. This is often accomplished by means of a T-tube. Some have advocated that one limb of the "T" be passed through the sphincter into the duodenum if there be any evidence of stenosis present.[14,17] The diltatation of the sphincter by dilators is also advanced as one of the principles to follow. It has been recommended that this dilatation be done rather vigorously.[13]

Cholangiography done at the time of operation has also been advocated as an aid to determine the presence or absence of disease of the duct. Zierold, as an advocate of this procedure, has not encountered pancreatitis as a complication in several hundred cases. Following this technique, the cholangiogram is most often done as a substitute measure for probing and instrumentation of the duct.[20]

As will be noted from the cases presented, it appears that leaving a tube extending into the duodenum creates a definite hazard and may precipitate an unfavorable outcome. It may also be concluded that cholangiography done at the time of the operation, especially when employed in addition to the usual exploratory procedures on the common bile duct and without control of pressure is not entirely an innocuous procedure. The surgical principle of the gentle handling of tissues, always a virtuous guide, applies as well to the dilatation of the sphincter of Oddi. Pancreatitis does occur following operation on the common duct and has a very poor prognosis.

A review of the literature on this subject reveals cases very similar to those herein presented. Allen[1] reports a patient who developed acute hemorrhagic pancreatitis and died within three weeks following cholecystectomy and common bile duct exploration at which time the sphincter was dilated to 8 mm. Smith[16] described acute pancreatic necrosis occurring in a patient following cholecystectomy and choledochostomy and terminating fatally on the sixteenth postoperative day. This patient had a long-armed T-tube left in with the tube going through the sphincter into the duodenum. The duct of Santorini did not communicate with the duct of Wirsung. Gargas[7] reported a case of acute hemorrhagic pancreatitis with a fatal outcome on the twenty-eighth postoperative day following choledochotomy. Shock was one of the outstanding symptoms in this case. Glenn and Hays[8] reported a case of pancreatitis following choledochostomy which at autopsy showed a large calculus impacted in the ampulla with an anatomical common-channel. Coffey,[4] reviewing 135 cases of pancreatitis with unusual features, encountered two fatal cases of acute hemorrhagic pancreatitis following choledochostomy. One of these had a long-limbed T-tube going through into the duodenum. Three patients had non-fatal pancreatitis resulting from cholangiography at the time of operation using 35 per cent diodrast. In two of these cases the pancreatic duct was visualized on the cholangiogram.

The following cases are presented to demonstrate the development of pancreatitis complicating surgery of the common bile duct:

Case 1.—C. M., a woman aged thirty, was admitted to the hospital November 9, 1950. Right upper quadrant pain, food dyscrasia, belching, and jaundice had been present for two weeks. Pruritus and acholic stools had been present one week. Examination showed icterus, and tenderness in the right upper quadrant. There was a poorly functioning gallbladder on cholecystogram. At operation two stones were removed from the common bile duct; cholecystectomy and choledochostomy were done. The sphincter was dilated to 7 mm. and a long-limbed T-tube left with one limb through the sphincter into the duodenum.

Thirty-eight hours postoperatively the patient developed profound vasomotor collapse. The shock responded to treatment for a time but the jaundice increased, the hypotension persisted, and the patient expired seventy-two hours postoperatively.

At autopsy, massive acute hemorrhagic pancreatitis with profuse fat necrosis in the peritoneal and pleural cavities was encountered. The long limb of the T-tube obstructed the main pancreatic duct of Wirsung at the common channel and the accessory (Santorini) duct did not communicate with the main pancreatic duct.

Case 2.—W. M., a man, aged sixty-four, was admitted to the hospital on May 16, 1951. He gave a history of noting melena intermittently for two years. The examination was noncontributory except for a suspicious small bowel lesion on x-ray examination. The cholecystogram was negative.

Exploratory laparotomy was done and stones were found in the gallbladder and also in the common bile duct when it was explored. Cholecystectomy was done and cholangiography carried out at the time of the operation. The sphincter was dilated to 7 mm. and a short limbed T-tube left in the common duct.

Postoperatively the patient did poorly and the course was progressively downhill. Forty hours postoperatively there was profound shock. The serum amylase was 242. There was pronounced drainage of sloughed necrotic pancreas and the patient went on to expire on the forty-eighth postoperative day.

Case 3.—O. P. was a seventy-year-old male admitted to the hospital on July 16, 1951, with a complaint of intermittent epigastric pain and food dyscrasia of one year's duration. There had been occasional jaundice and acholic stools with these episodes.

Examination revealed icterus of the skin and sclerae. The urine showed positive bile and the serum amylase was normal.

Cholecystectomy was done and common duct exploration carried out. A stone was removed from the lower end of the common duct. The sphincter was dilated to 7 mm. A short limbed T-tube was left in the common duct.

On the sixth postoperative day the patient developed severe substernal pain and hypotension. A diagnosis of coronary occlusion was made. The patient gradually lost ground and expired on the nineteenth postoperative day.

Autopsy showed pancreatic necrosis in the head of the pancreas. The heart was normal.

Case 4.—G. S., a man aged fifty-eight, was admitted to the hospital on July 25, 1951. The history was that of epigastric distress for two years. There had been relief obtained with soda and vomiting. For one week before admission he had had severe abdominal pain of an acute nature and periods of colic.

Examination showed an acutely ill man with an enlarged liver and a tender mass below the liver thought to be the gallbladder.

After two weeks of conservative treatment without much improvement operation was undertaken. A subacute cholecystitis was found and the gallbladder was removed. Common duct exploration was carried out, the sphincter dilated to 5 mm., and cholangiography done at the time of the operation. T-tube drainage was established using a short limbed tube.

The patient did not do well postoperatively. He failed to establish peristalsis and had several periods of hypotension responding to conservative treatment temporarily. Of the seventh postoperative day a mass developed in the operative area and drainage of an acute pancreatic necrosis was instituted. He expired on the seventeenth postoperative day. At autopsy marked pancreatic necrosis was found.

Case 5.—B. H., a man aged fifty-seven, was admitted to the hospital on June 27, 1952. There was a thirty-four-year history of intermittent, nausea, epigastric pain, and vomiting. Fourteen years previous an operation had been performed for suspected perforation of a duodenal ulcer and an acute pancreatitis had been encountered. He had an acute exacerbation of symptoms the day before admission.

Examination showed epigastric tenderness and evidence of rebound tenderness. The white blood count was 19,850 and the serum amylase 3036 units.

After one month of conservative management with complete subsidence of acute symptoms, cholecystectomy was done. Common duct exploration was carried out. The sphincter was dilated to 5 mm. and a short limbed T-tube left for drainage. Cholangiography was done after the exploration at the time of operation.

The patient had a febrile postoperative course, jaundice became marked, there was profuse bile drainage, and leukocytosis of 23,350 developed. A bile abscess followed and was drained. The drainage was profuse. A mass in the operative area was surgically drained and pancreatic necrosis encountered. The patient became a feeding problem, feeding jejunostomy was established but he gradually lost ground and expired on October 19, 1952.

Conclusions

1. Pancreatic necrosis does occur following surgery of the common bile duct.

2. The prognosis after its development is very unfavorable.

3. Trauma to the sphincter by rough handling and instrumentation may precipitate reflux and the development of pancreatitis.

4. Leaving of the tube through the sphincter into the duodenum may block the outlet of the pancreatic duct and promote development of pancreatic necrosis.

5. Cholangiography done at the time of operation without adequate control of pressure may have an adverse effect and be a factor in the development of pancreatic necrosis.

Bibliography

1. Allen, A. W.: Diagnosis and treatment of stones in common bile duct. Surg., Gynec. & Obst., 62: 347, 1936.
2. Archibald, E.: The experimental production of pancreatitis in animals as the result of the resistance of the common duct sphincter. Surg., Gynec. & Obst., 28:529, 1919.
3. Cameron, A. L., and Noble, J. F.: Reflex of bile up the duct of Wirsung caused by an impacted biliary calculus. J.A.M.A., 82:1410, 1924.
4. Coffey, R. J.: Unusual features of acute pancreatic disease. Ann. Surg., 135:715, 1952.
5. Colp, R., and Ginsberg, L.: Mortality in surgical diseases of the biliary tract. Ann. Surg., 105:9, 1937.
6. Fitz, R. H.: Acute pancreatitis. Boston Med. & Surg. J., 120:181, 1889.
7. Gargas, Bruno, L., and Christopher, F.: Fatal hemorrhagic pancreatitis following choledochotomy. Quart. Bull., Northwestern Univ. M. School, 25: 203, 1951.
8. Glenn, F., and Hays, D. M.: The causes of death following biliary tract surgery for nonmalignant disease. Surg., Gynec. & Obst., 94:283, 1952.
9. Howard, J. M.: Surgical physiology of pancreatitis. Surg. Clin., No. Am., 29:1789 (Dec.) 1949.
10. Howard, Jones: The anatomy of the pancreatic ducts. Am. J. Med. Sci., 214:617, 1947.
11. Howard, John M.; Smith, A. Krehl, and Peters, J. Joseph: Acute pancreatitis, pathway of enzymes, blood streams. Surgery, 26:161, 1949.
12. Howell, C. W., and Bergh, G. S.: Pancreatic duct filling during cholangiography. Gastroenterology, 16:309, 1950.
13. Lahey, F. H.: Common and hepatic duct stones. Am. J. Surg., 40:209, 1938.
14. Mahorner, H.: Exploration of common bile duct. Am. Surg., 17:9, 1951.
15. Opie, E. L.: Etiology of acute hemorrhagic pancreatitis. Bull. Johns Hopkins Hosp., 12:182, 1901.
16. Smith, S. W.; Barker, W. F., and Kaplan, L.: Acute pancreatitis following transampullary biliary damage. Surgery, 30:695, 1951.
17. Walters, W., and Snell, A. M.: Diseases of the Gallbladder and Bile Ducts, p. 432. Philadelphia: W. B. Saunders, 1940.
18. Wangensteen, O. H.; Leven, N. L., and Manson, M. H.: Acute pancreatitis. Arch. Surg., 23:47, 1931.
19. von Schmeiden, and Sebening, W.: Surgery of the pancreas. Surg., Gynec. & Obst., 46:742, 1928. (Translation of Report before Society of German Surgeons—1927.)
20. Zierold, A. A.: Diagnosis and treatment of stones in common bile duct. Personal Communication.

CARCINOMA OF CARDIAC END OF STOMACH AND ESOPHAGUS

CHARLES B. PUESTOW, M.D.
Chicago, Illinois

Carcinoma of the cardiac end of the stomach and of the esophagus is a more common disease than is generally recognized by the medical profession. As the patients admitted to the Veterans Administration Hospital, Hines, Illinois, are largely residents of the surrounding area, the statistics from this hospital should give a fairly accurate indication of the incidence of this disease among adult males of the Middlewest. Patients admitted to this hospital during the past five years included those with carcinoma of the lung, colon, stomach and esophagus in the following number and approximate ratio:

1946-1951

	No. of Cases	Ratio
Lung	606	4
Colon	495	3
Stomach	288	2
Esophagus	135	1

It is interesting to note that for every two patients admitted with carcinoma of the stomach, one patient is admitted with carcinoma of the esophagus. Of the patients with carcinoma of the stomach, a large number have had the disease located in the proximal portion of this organ.

Carcinoma of the Esophagus

Carcinoma of the esophagus has been a neglected disease because until recent years the physician had little to offer the patient. As a result, the recognition of this disease and the methods of study have been disregarded. Almost invariably tumors of the esophagus manifest themselves months before they are diagnosed and a longer time elapses before the patient is referred to a surgeon competent to administer adequate therapy.

A careful analysis of patients with carcinoma of the esophagus has shown three early symptoms. The first of these is anorexia. The loss of appetite of patients in middle or later life is the earliest symptom of carcinoma of the esophagus and of the proximal stomach. This symptom should suggest to the physician the possibility of such a lesion. A relatively short time later the patient complains of a vague substernal discomfort often associated or soon followed by some difficulty or distress in swallowing solid food. These symptoms suggest a lesion of the esophagus, and demand immediate study of this structure.

Late symptoms of carcinoma of the esophagus consist of difficulty in swallowing soft foods or liquids, progressive weight loss and occasionally hematemesis. If these symptoms develop, they are usually an indication of an advancement of the disease to a stage where complete cure is impossible because of direct or metastatic spread.

Methods of Diagnosis.—In the very early stages of carcinoma of the esophagus, the lesion often can be recognized only by esophagoscopy. When it is very small, roentgenologic studies may not reveal this disease. If a suspicious lesion is seen through the esophagoscope a biopsy is indicated. Many endoscopists fear biopsy because of the danger of perforation of the esophagus and the development of mediastinitis. In the past this was a serious complication. At present its dangers are greatly minimized by the use of antibiotics and the surgical approach to this complication.

Roentgenologic studies often will reveal carcinoma of the esophagus even at an early stage. In the past, roentgenologists neglected the esophagus in gastrointestinal studies. Their interest and study of this organ in recent years has enabled them to diagnose many early lesions. The entire medical profession must realize that the gastrointestinal tract does not begin in the mid portion of the stomach, if early diagnosis of lesions of the esophagus and proximal stomach are to be made.

It is interesting to note that although anatomy of the stomach is an old science, it has only been recently recognized that all blood supply to this organ, except that supplied through the right gastric and right gastroepiploic arteries, can be interrupted and the organ will remain entirely viable and anastomotic procedures at its fundus will heal in a normal manner. Only recently was it realized that the stomach could be transplanted into the chest or even through the chest and into the neck to replace the entire esophagus with easy and with little physiologic disturbance.

Principles of Surgical Approach.—The entire stomach and thoracic esophagus can be dealt with surgically by a resection of the seventh left rib and an incision through the diaphragm. If the esophagus above the arch of the aorta is to be utilized, access to it is facilitated by division of the posterior end of the left sixth and sometimes fifth rib. Some surgeons prefer to approach the esophagus through the right chest. This necessitates mobilization of the stomach through an additional abdominal incision. We prefer the left thoracic approach because it involves less surgical time and trauma. We have always been able to mobilize the esophagus behind the arch of the aorta through a left thoracic incision in operable lesions. If the carcinoma involves the cervical esophagus, we prefer to first approach it

---

Dr. Puestow is Clinical Professor of Surgery, University of Illinois College of Medicine, and Chief, Surgical Service, Veterans Hospital, Hines, Illinois.

Published with the permission of the Chief Medical Director, Department of Medicine and Surgery, Veterans Administration, who assumes no responsibility for the opinions expressed or the conclusions drawn by the author.

through a neck incision to determine its operability. If the lesion can be resected, the left thorax is then entered, the stomach and esophagus mobilized and the stomach brought up through the chest anterior to the aorta and into the neck incision where it can be anastomosed to the cervical esophagus above the lesion. Lesions of the lower esophagus which can be satisfactorily removed and the stomach anastomosed to the esophagus below the arch of the aorta are approached by resection of the left eighth rib.

High Gastric Lesions

Malignant lesions of the proximal stomach can be readily approached by resection of the left eighth rib and an incision through the left diaphragm. This approach gives direct access to the stomach and surrounding organs which may be invaded by tumor, including the left lobe of the liver, spleen, pancreas, left adrenal gland and the portion of the diaphragm surrounding the esophagus. It permits an extensive glandular resection, especially in the region of the celiac axis. It also permits a wide omental resection. It is our belief that the incidence of cure or prolonged palliation is more dependent upon the extent of resection of gland bearing tissue than upon the amount of uninvolved stomach removed. We prefer to save some normal stomach if possible because we believe this leads to greater subsequent physiologic comfort.

Postoperative Care

The postoperative care of patients undergoing gastroesophageal resection is as important as the surgical technique employed. This care should be the joint responsibility of the surgeon, anesthesiologist, and well trained recovery room personnel. The following points are emphasized in the postoperative management of these patients.

A. Stir-up Regime.—Patients are frequently moved from side to side and urged to move around in bed. They are ambulated early.

B. Tracheo-bronchial Aspiration.—The patient is constantly observed for evidences of tracheo-bronchial occlusion. When this occurs, immediate aspiration by tracheal catheter or bronchoscope is instituted. We do not believe routine tracheotomy is advisable or necessary for the removal of bronchial secretions.

C. Suction.—A double lumen tube is placed at the time of operation with the suction portion in the stomach and the feeding limb extending into the small bowel. Constant suction is maintained to avoid distention which may place traction on the suture line and also interfere with the cardio-respiratory system.

D. Sedation.—The use of opiates is discouraged. Thoracic pain is controlled by intercostal block. This permits the patient to breathe deeply without pain and minimizes pulmonary complications.

E. Oxygen Therapy.—Oxygen is administered only when there is evidence of oxygen want. It is administered by nasal catheter or oxygen mask. We are opposed to the use of oxygen tents because they interfere with other postoperative measures.

F. Nutritional Balance.—An effort is made to replace blood, volume for volume, by careful determination of the amount lost at operation. Additional blood is not given unless there is evidence of anemia. Other fluids and nutritional elements are given as indicated, and caution is taken not to overload the circulation.

G. Antibiotics.—The use of antibiotics is important but does not replace other factors in good postoperative care.

A well organized recovery room with trained personnel is a great aid to the recovery of patients undergoing transthoracic gastroesophageal surgery.

Results

Mortality.—The mortality of gastroesophageal surgery has been noticeably diminished and should not be higher than in other types of major surgery performed upon similar types of patients. The most important single factor responsible for postoperative complications is the poor nutritional state of these patients when they are presented to the surgeon, and the difficulty of improving their nutritional state before operation.

Cure.—We believe that carcinoma of the esophagus can be cured in a higher percentage of cases than carcinoma of the stomach. This is probably not true at present because of the advanced stage of the disease at the time of operation. Our patients have had symptoms for periods ranging from three months to over a year and usually have lost from twenty-five to seventy-five pounds in weight. As this disease tends to produce symptoms in its early stages, its early recognition and treatment should improve surgical results.

Palliation.—Even though the disease has spread to adjacent structures where it cannot be entirely irradicated or has metastasized to other organs, removal of the local lesion and re-establishment of the continuity of the esophagus and stomach can give patients many months of comfort during which time they are able to ingest food and are relieved of the distressing symptoms of starvation.

The meeting adjourned.

Albert T. Hays, M.D., *Recorder*

Minnesota Academy of Medicine

Meeting of October 8, 1952

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town & Country Club on Wednesday evening, October 8, 1952. Dinner was served at 7 p.m. and the meeting was called to order at 8:15 p.m. by the President, Dr. Owen H. Wangensteen.

There were forty-two members and six guests present.

Minutes of the May meeting were read and approved.

Dr. Lowry, Chairman of the Program Committee, asked the members to send in titles of papers or cases they would like to present during the coming year.

Dr. John E. Hynes read the following Memorial to Dr. Charles D. Freeman, and a motion was carried that it be spread on the records of the Academy and a copy sent to the family of Dr. Freeman.

CHARLES D. FREEMAN, 1879 - 1952

Charles D. Freeman was born in St. Paul on January 20, 1879, son of George and Mrs. Freeman. He was graduated from Central High School, and attended the University of Minnesota two years in the College of Science, Literature and Arts, before deciding upon a career in Medicine. He matriculated in the University of Minnesota Medical School in 1900, and was graduated in 1904. After a year as intern in Luther Hospital, he spent two years in postgraduate study in Vienna, Berlin, Paris and London, specializing in Dermatology, and returned to St. Paul where he practiced until his retirement three years ago.

He was a member of the American Medical Association, Minnesota State Medical Association, Ramsey County Medical Society, a Past President of the Minnesota Academy of Medicine, and a member of the American Dermatological Society. He was on the staffs of Ancker, St. Joseph's, and St. Luke's Hospitals, and a member of the University of Minnesota Medical School teaching staff.

As it must come to all things mortal, death came to him on April 18, 1952, at the age of seventy-three years. He is survived by his wife, two daughters, Margaret and Helga, and a son, Dr. Charles D. Freeman, Jr., all of St. Paul.

In addition to his other good qualities, his one great characteristic was friendliness. We do not believe he had an enemy in the world.

No better example of love and selfless sustaining devotion could be possible than that of his wife in his last long illness.

Ave, atque vale!

John E. Hynes, M.D.
Harold E. Hullsiek, M.D.

Dr. Eldon B. Berglund of Minneapolis [by invitation] gave a paper on "Surgical Approach to Atelectasis in the Newborn."

SURGICAL APPROACH TO ATELECTASIS IN THE NEWBORN

O. S. WYATT, M.D., T. C. CHISHOLM, M.D., E. BERGLUND, M.D.,
and W. P. EDER, M.D.
Minneapolis, Minnesota

Atelectasis of the newborn accounts for approximately 50 per cent of all deaths in the neo-natal period. The causes of atelectasis in the newborn are still the subject of controversy. One group feels that aspiration of the amniotic fluid during the time of delivery results in failure of the lungs to expand properly. Another group contends that aspiration of the amniotic fluid does not account for the development of the atelectasis. Over recent years attention has been focused on the so-called hyaline membrane, a pink staining homogenous material lining the alveolar ducts which is seen on microscopic section of lungs of newborns dying of the clinical picture of the atelectasis.

The disease occurs most commonly in premature infants but may be seen in full term infants. The diagnosis during life is based primarily on clinical findings. These babies develop respiratory distress in some instances immediately after birth, in other instances not until several hours have elapsed. They become cyanotic when removed from oxygen, but the cyanosis is relieved quickly with oxygen. They have moderate to marked intracostal retractions often accompanied by short, whining cries. Clinical and x-ray examinations can quite accurately exclude the presence of such conditions as diaphragmatic hernia, congenital heart disease, spontaneous pneumothorax, and brain damage which may minimize the symptoms of congenital atelectasis.

The treatment in the past has been primarily symptomatic and quite unsatisfactory. About 50 per cent of the infants with the well-developed clinical picture recover spontaneously. Over the past three years we have attempted a surgical procedure on twenty-three newborn infants who appeared to be succumbing to congenital atelectasis. An equal number of infants have been seen and not operated upon. This report concerns primarily the infants who were operated upon. Of the twenty-three infants, eleven have survived, twelve have died. Twelve of the infants were delivered by cesarean section, an incidence which would, to our minds, definitely establish cesarean section as a causative factor in the development of the congenital atelectasis. Of the remaining infants, only four were considered to have been normal deliveries. The others were delivered with such complications as precipitate delivery, abruptio placenta and marginal placenta previa. Our findings in this respect would definitely implicate abnormal deliveries of one kind or another as being contributory in the development of congenital atelectasis, probably because of the increased chances for aspiration of amniotic fluid and the subsequent development of a hyalinc membrane during and following such delivery.

The surgical procedure consists of opening the chest with a short incision through the fourth and fifth interspace on one side. Positive air pressure ranging up to 35 cc. of water is applied through the nose and mouth by a tight-fitting mask. In five instances there was a dramatic expansion of the lungs. These babies survived. In six instances there was no dramatic expansion of the lungs, but these babies also survived. In the remaining patients expansion of the lungs was negligible and the infants did not survive. Many of the infants were moribund at the time of operation.

This experience with congenital atelectasis of the newborn has not led to a completely satisfactory method of treatment. It has helped us to understand the disease process better and has, to our minds, established the importance of the abnormal delivery as one factor in the development of the disease, and it has, in some instances, we believe, helped babies to survive.

Discussions

Dr. W. P. Eder, Minneapolis (by invitation): There is very little I can add to Dr. Berglund's excellent presentation. Perhaps just a word about the rationale of the surgery itself. We had considerable arguing to do to convince the chest surgeons that the procedure had merit. The lungs occupy the entire thorax; therefore, the pressure applied does not expand the lung. It does not help in overcoming the hyaline membrane which Dr. Berglund mentioned. The lung expands with positive pressure. The mediastinum shifts to the side of the thoracotomy and therefore assists the lung on the opposite side to expand. We have been very much interested in this problem. I feel strongly that these eleven infants that survived would definitely not be alive had we not done this procedure.

Dr. Thomas Lowry, Minneapolis: I don't have a great deal to add. I was privileged to watch one of these procedures (one of the ones which did not result in recovery) but it was a most interesting thing. I don't have enough experience with the condition or its treatment to say much about it. I enjoyed Dr. Berglund's presentation and think we will all be watching to see what success is accomplished.

Dr. M. B. Visscher, University of Minnesota: This is a very interesting problem from the physiologic viewpoint and I was very much interested in the report Dr. Berglund and his associates have given. Atelectasis is a very difficult term to define, as these gentlemen know very well, and I am not quite sure that it is fair to call the situation that they have studied a true atelectasis. If their criterion for diagnosis is valid, namely, that on administration of oxygen the cyanosis is relieved, the lung is not atelectatic but is more likely edematous. In simple atelectasis, administration of 100 per cent oxygen has little effect upon the arterial oxygen saturation. In pulmonary edema 100 per cent oxygen has very large effects. I would suggest that a study be made of the state of the heart in these newborns. It is extremely likely that left heart failure will be found. Full expansion of lungs with interstitial edema improves blood oxygenation and indirectly relieves heart failure.

May I also raise the question as to whether all possible non-surgical methods for producing greater lung expansion have been tried.

I think there is a lot of very interesting physiology here and want to congratulate the authors on these studies.

Dr. Harold Flanagan, St. Paul: I enjoyed this paper very much; there has been a great deal of work done in producing this paper. Some weeks ago I saw a newborn infant that I thought was a congentital heart. I gave morphine with almost immediate improvement. The infant had an atelectasis, and the relaxing effect of the morphine on the diaphragm and gastric distention, must have been the cause of the immediate improvement.

Dr. Jerome Hilger, St. Paul: I should like to comment on what Dr. Berglund has said about endoscopic procedure for the relief of this infant problem. For many years we were called by the pediatricians quite frequently to relieve these children through endoscopic aspiration. It became apparent to us that much of our effort was futile and that in the average case retained secretion available to tracheo-bronchial aspiration was not present in any significant quantity and the effort at aspiration in no way eased the child's problem.

We even had the American Cystoscope people make us a fiber catheter with a Coude angle at the tip with the end open. This was less traumatic than a bronchoscope and just as effectively cleared the sub-glottic trachea and bronchi. It could be directed right or left into the major bronchi. Even its insertion disturbed some of these children a very great deal and we had the feeling that the aspiration in some cases caused more disturbance than improvement. This flexible aspiration catehter, however, did permit one to connect oxygen directly into the trachea and insufflation after the aspiration was very helpful in maintaining a good color. This is very difficult to do with a bronchoscope in place without a great deal more trauma.

It must be borne in mind, however, that the same clinical picture that Dr. Berglund presents can be duplicated by an occasional laryngeal problem developed in the prenatal period such as a laryngeal cyst or web. Since this is true, unless first the larynx and upper air passages are viewed directly, an occasional child with such a lesion is going to have a thoracotomy to no purpose.

Since the thoracotomy does nothing in effect but create space for the lung expansion to take place, and since the latter is accomplished by bag breathing, I would like to ask what other work has been done using this same pressure through the airway but using other methods of increasing the thoracic space for expansion. After all, in normal breathing, we increase our thoracic space by lowering the diaphragm and increasing the rib cage size. I assume there is nothing to prevent the rib cage from increasing in these flaccid chest walls. In so far as lowering the diaphragm goes, certainly the biggest disadvantage is the gas-filled stomach below. If this were decompressed with a continuous in-dwelling catheter in the stomach during the bag insufflation, one would feel as much would be accomplished by the bag pressure under these circumstances as through the creation of more space through an open thoracotomy.

Dr. Berglund, in closing: Dr. Hilger asked what work has been done in creating pressure through the mouth and the patient's larynx and how we keep the stomach deflated? We have done that at the time of the procedure. We oftentimes just push our hand on the baby's abdomen. One of the procedures that has been tried is to introduce oxygen into the stomach and let it flow out through a second tube. Ten per cent of the baby's oxygen needs can be maintained by that means. As far as applying pressure to the lungs before operation, we tried that; we had the anesthetist apply pressure in one case for forty minutes; after that time we opened the chest and found the lungs completely atelectatic. We were convinced by that, and also from what I have read in the literature, that application of positive pressure before the chest is opened does not work. We have not done that as a routine procedure since those early experiences. We felt that opening the chest itself enables the operator to see the lung and see how long the pressure needs to be applied.

Dr. S. R. Maxeiner, Minneapolis, read a paper on "Synovioma; Diagnosis, Prognosis and Treatment."

SYNOVIAL SARCOMA

Report of Five Cases

STANLEY R. MAXEINER, M.D., F.A.C.A., F.I.C.S.
and
B. H. MCLAUGHLIN, M.D.
Minneapolis, Minnesota

Synovial sarcoma is a tumor with which surgeons are apparently little acquainted. It is extremely malignant, arising from serous lining of synovial cavities (joint synovial lining and the synovial linings of overlying bursae).

More and more cases are reported in the recent literature, not because of its increased frequency, but because of the awareness of our profession. In 1949, the Mayo Clinic reported only twenty-eight cases with approximately 222 cases reported in the total literature to that date. McCartney of the Department of Pathology of the University of Minnesota, in 1945 reported eight cases, all encountered within the last five years.

Etiology

Sex.—Sex apparently plays no important part.

Age.—The average age of the reported cases is approximately thirty-six years.

Trauma.—Trauma has been considered, but little definite proof has been established as an etiologic feature.

Inflammation.—Inflammation may be an etiologic feature.

Location.—The majority of the tumors are located in or near the knee joint. Other common sites are, the foot, thigh, ankle and hand. The majority of reported cases have been found to involve the extremities.

Symptoms.—The prevailing clinical symptoms are: (a) pain; (b) presence of a mass; (c) joint dysfunction; (d) fluid swelling of the joint. The average duration of symptoms before diagnosis is probably from two to three years.

Diagnosis.—A positive diagnosis is made only by microscopy. These tumors are variable in size, texture, color and consistency. Usually the synovioma is circumscribed by a pseudocapsule. Its consistency may be firm, moderately fibrous, spongy or friable. Pinkish-grey areas of viable tumor are frequently interspersed with yellow areas of necrosis and brown or red portions resulting from old or recent hemorrhages. Occasionally, there are small areas of calcification. There are three basic morphologic patterns:

1. Formation of tissue spaces that form slitlike clefts to well-defined gland-like spaces containing a serous or mucinous fluid. The mucin production may be confined to the gland-like spaces or may appear as small interstitial accumulations among the endothelial components of the tumor cells.

2. Formation of cell tufts, which varies from compact groups of oval or polygonal cells segregated in solid portions of the tumor to papillary projections extending into clefts and gland-like spaces.

3. Reproduction of epithelial-like cells on a stroma of compact elongated cells with small dark nuclei. There may be a supporting prominent argyrophilic recticulum. Extension of the tumor into vascular channels and invasion into adjacent tissue may occur. Mitotic figures are observed fairly frequently. All synovial sarcomas are malignant, but it is the consensus that they are not all equally malignant. The least malignant are those showing a high degree of histiocystic differentiation, characterized by multinucleated giant cells, pigmented cells and fibrous areas. The most highly malignant are probably those composed of densely packed round, oval and reniform cells, with much supporting reticulum and numerous mitotic figures.

(The above description is by Dr. R. Sanford, Pathologist, Asbury Hospital, Minneapolis.)

Treatment.—Treatment is first dependent on an accurate indisputable diagnosis of a malignant synovioma. Radical surgical resection is recommended by some, but is probably grossly inadequate in view of the long time low survival rate. Most writers of experience, advocate radical amputation immediately. The tendency for the lesion to invade is strongly in favor of amputation. Lower quarter resection probably has no advantage over a hip disarticulation.

Prognosis.—The prognosis in synovial sarcoma is poor. The disease spreads by invasion, by lymphatics

---

Dr. Maxeiner is Clinical Professor of Surgery, Department of Surgery, University of Minnesota School of Medicine.

and by the blood stream. Dr. Coventry of the Mayo Clinic at the time that I talked to him, stated that they had no patients alive and well at five years. Three of our five patients reported expired from pulmonary metastases.

Report of Cases

Case 1.—A white woman, forty years of age, consulted us in February of 1950, complaining of a mass on the inner aspect of her right thigh. Her general condition was excellent. Her family and past history, general physical and laboratory examination, together with chest x-rays, were unimportant.

The mass was completely removed, together with a very wide muscular excision and excision of the superficial femoral vein. There was considerable difficulty in obtaining a microscopic diagnosis, several opinions being ventured, and about five days later a consultation of pathologists confirmed the diagnosis of synovioma. An immediate exact frozen section diagnosis seemed impossible. The operation was followed by a series of high voltage x-ray treatment. Although reports in the literature admit little if any effect from x-ray therapy, it is still recommended.

One year later, the patient again returned with a mass in the same location and an exarticulation of the hip was done. Again the pathological report revealed the diagnosis of recurrent malignant synovioma. The patient did extremely well for a number of months at which time she complained of dyspnea and pain in her chest. Roentgenograms revealed extensive pulmonary metastases from which she expired only four months after her second operation.

Case 2.—Mr. T., aged forty, whose family history and previous illnesses are irrelevant, stated that, in 1944, while in the military service he developed pain in his foot. An ankle fusion was done and subsequently a mass appeared on the bottom of his foot. This was excised and a diagnosis of malignant synovioma prompted immediate amputation below the knee. This was done at the United States Veterans Hospital in Minneapolis. To date, the patient is well. Pathological examination of the foot, revealed remaining tumor tissue.

Case 3.—Also reported from the records of the United States Veterans Hospital in Minneapolis, is the case of a man, aged twenty-three, whose history is unrevealing except as related to his present complaint.

He stated that, in 1947, there was swelling with chilling and fever and inability to straighten his arm. Examination revealed a cystic swelling deep to the biceps and about the size of a baseball.

Through an anterior approach, the mass was removed. The tumor was attached to the elbow joint capsule. The pathological report was synovial sarcoma of the left elbow. The patient refused amputation and was given extensive x-ray therapy. One year later, examination revealed multiple pulmonary metastases from which he expired.

Case 4.—From the records of the United States Veterans Hospital in Minneapolis, also is reported the case of a man, aged twenty-nine, whose family and past history were noncontributory. The symptoms were first noted in 1944, while he was in the navy.

In 1951, the patient was seen at the Veterans Hospital with a tumor of the right knee, anterior and lateral to the patella, measuring 2 x 3 inches. The tumor was firm and nodular, but not tender. It was widely excised under general anesthesia. The frozen section was reported as a xanthoma, but the first permanent section revealed a synovioma. An amputation was not done, but the patient was given extensive x-ray therapy. He subsequently developed pulmonary metastases.

Case 5.—This is the case of a man, aged thirty, who stated that sixteen years earlier he was operated on for a tumor of his right elbow. It was operated on again in 1946, for the third time in July, 1947, and again in November, 1947. The tumor produced no symptoms, other than a mass in the region of his elbow, approximately 3 x 3½ inches. The mass was widely excised, together with surrounding and invaded tissues. The microscopic diagnosis was fibrosarcoma of the synovial type. In February of 1948 another recurrence was removed and in April of 1948, the patient was seen by Dr. Willard White who performed a disarticulation of the shoulder. Healing was excellent, and there has been no recurrence to date. This history of repeated operations is extremely unusual.

Summary

Synovial sarcoma, i.e., malignant synovioma, must not be confused with giant cell synovioma or other tumors. Pathological diagnosis is apparently difficult, and one must be careful and be positive of a diagnosis of synovial sarcoma, before amputation, the most widely accepted procedure, is advised. The survival rate is extremely low, but we believe that an immediate diagnosis with radical surgery affords the best opportunity for a cure.

The meeting was adjourned.

Wallace P. Ritchie, M.D., *Secretary*

DRUGS TESTED IN TREATMENT OF TUBERCULOSIS

After a review of available data on the action of isonicotinic acid hydrazide and its isopropyl derivative upon the tubercle bacillus *in vitro,* and upon the course of experimental tuberculosis in animals and clinical tuberculosis in man, it may be stated that their demonstrated action, although highly encouraging, appears in no way to alter the basic principles of the treatment of tuberculosis as presently understood. Much more work will need to be done to ascertain the exact place of these drugs in the treatment of this disease. It is anticipated that further information will accumulate rapidly.—The Executive Committee of the American Trudeau Society (Medical Section of the National Tuberculosis Association), *Tuberculosis Abstracts,* May, 1952.

◆ Reports and Announcements ◆

POSTGRADUATE COURSE—DISEASES OF THE CHEST

The Sixth Annual Postgraduate Course in Diseases of the Chest sponsored by the American College of Chest Physicians, Pennsylvania Chapter and the Laennec Society of Philadelphia, will be presented at the Bellevue-Stratford Hotel, Philadelphia, Pennsylvania, March 23-27, 1953.

This course will emphasize the recent developments in all aspects of the diagnoses and treatment of chest diseases. The course is open to all physicians; however, the number of registrants will be limited.

The tuition fee is $50 and applicants will be accepted in the order in which they are received. This course has been approved for credits by the American Academy of General Practice. Applications should be sent to the Executive Director, American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Illinois.

* * *

CONGRESS OF PHYSICAL MEDICINE AND REHABILITATION

The thirty-first annual scientific and clinical session of the American Congress of Physical Medicine and Rehabilitation will be held August 31, September 1, 2, 3 and 4, 1953, inclusive, at the Palmer House, Chicago, Ill.

Scientific and clinical sessions will be given on the days of August 31 and September 1, 2 and 3. All sessions will be open to members of the medical profession in good standing with the American Medical Association.

In addition to the scientific sessions, annual instruction seminars will be held. These lectures will be open to physicians as well as to therapists, who are registered with the American Registry of Physical Therapists or the American Occupational Therapy Association.

Full information may be obtained by writing to the executive offices, American Congress of Physical Medicine and Rehabilitation, 30 North Michigan Avenue, Chicago 2, Illinois.

* * *

KENFIELD MEMORIAL AWARD

Competition for the 1953 Kenfield Memorial Scholarship, awarded annually by the American Hearing Society to a prospective teacher of lipreading to the hard of hearing, opens March 1. Application blanks may be obtained from Miss Rose V. Feilbach, chairman of the Society's Teachers Committee, 1157 North Columbus St., Arlington, Va. Deadline for returning applications, completed, is May 1.

Funds for the scholarship were subscribed in 1937 in memory of Miss Coralie N. Kenfield, San Francisco, Calif., who was nationally known for her advanced methods in teaching lipreading. Winner of the award is entitled to take a teacher training course in lipreading from any normal training teacher, school or university in the United States acceptable to the American Hearing Society's Teachers Committee. The scholarship is to be used within one year from date of award.

An acceptable applicant for the scholarship must be a well-adjusted individual with a pleasing personality, legible lips, a good speech pattern and no unpleasant mannerisms. Graduation from college with a major in education, psychology and/or speech is a requirement. Specifications for a hard-of-hearing contestant include thirty hours of private instruction in lipreading from an approved teacher or sixty hours of lipreading in public school classes under an approved teacher. Rules for competition state that an applicant shall plan to teach lipreading, with or without other types of speech or hearing therapy.

In 1952 the Kenfield Memorial award went to Miss Marion R. Allen, Minneapolis, Minnesota.

* * *

MANUAL FOR ARTHRITIS CLINICS

A manual for Arthritis Clinics has just been published jointly by the Arthritis and Rheumatism Foundation and the National Institute of Arthritis and Metabolic Diseases. This sixty-four-page book contains practical information on the administration of a clinic for the rheumatic diseases as well as diagnostic criteria, information on selecting and training a clinical staff.

Copies are 50 cents and may be obtained by writing to any of the thirty-two chapters of the Foundation, or to National Headquarters, 23 W. 45th Street, New York 36, New York.

* * *

HEART SPECIALTY TRAINEESHIPS

Fifteen young physicians have recently been given special training awards under the clinical traineeship program of the National Heart Institute. A total of thirty-two physicians are now receiving heart traineeships, studying in twenty-five institutions in twelve states and the District of Columbia.

Four Minnesota doctors studying under this program are Dr. Bertram Levin, Heart Hospital, Minneapolis; Dr. William F. Maloney and Dr. Daniel H. Simmons at the University of Minnesota Hospitals, Minneapolis, and Dr. Leo Wright at the Mayo Foundation, Rochester.

Since the inception of the program four years ago, 149 physicians have been given the opportunity to acquire special skills in diagnosing and treating the heart diseases which afflict about nine million people in the United States. The majority of these doctors have completed their periods of study and are helping to relieve the serious shortage of physicians who understand techniques of interpreting electrocardiograms, carrying out cardiac fluoroscopy and correlating various diagnostic findings. These doctors will apply and develop their new skills to

(Continued on Page 178)

Dramamine®
in Vertigo

The remarkable relief afforded by Dramamine in motion sickness has led to studies of its possible value in allied conditions.

Dramamine apparently depresses hyperstimulation of the vestibular apparatus. Thus it is an effective means of relieving the nausea and vertigo which characterize dysfunctions of the middle ear.

Accepted Uses for Dramamine
(BRAND OF DIMENHYDRINATE)

MOTION SICKNESS

NAUSEA and VOMITING associated with
- pregnancy
- drugs (certain antibiotics, etc.)
- electroshock therapy
- narcotization

VESTIBULAR DYSFUNCTION associated with
- streptomycin therapy

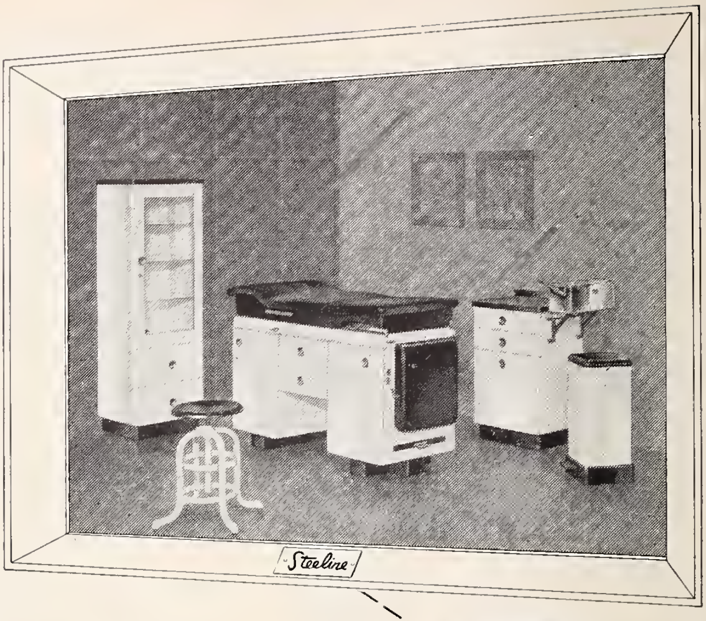
VERTIGO in
- Ménière's syndrome
- hypertensive disease
- fenestration procedures
- labyrinthitis
- radiation sickness

ACCEPTED
COUNCIL ON PHARMACY AND CHEMISTRY
AMERICAN MEDICAL ASSOCIATION

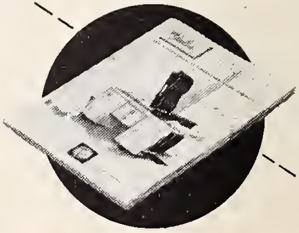
SEARLE *Research in the Service of Medicine*

design achievement in treatment room furniture

New Steeline has gone through fifteen years of gradual development to reach the fine degree of design perfection it now has. The suggestions of scores of physicians and the engineering skill of our own production plant have been combined to produce this outstanding treatment room equipment. New features such as foam rubber cushioned contour top, magnetic door latches, concealed paper sheeting holder, superb color finishes, etc., are all fully described and illustrated in our new full-color brochure—send for yours today.



FREE . . . 16-page full-color brochure complete with specifications — send for your copy today.



A. S. ALOE COMPANY OF MINNESOTA • 927 Portland Avenue • Minneapolis 4, Minnesota

---

HEART SPECIALTY TRAINEES

(Continued from Page 176)

improve the health or lengthen the lives of the people they treat, whether as staff members of cardiology departments in hospitals, or in carrying on a high level of private practice.

Traineeships carry stipends of $3,000 per year for trainees without dependents and $3,600 for those with dependents. Eligible for such special study are doctors who are citizens, who have completed a general internship, have at least one additional year of experience or training, and are not over forty years of age. Applications for the traineeships may be obtained from the National Heart Institute, Public Health Service, Bethesda 14, Maryland.

NATIONAL COUNCIL ON RURAL HEALTH

One of the ways in which the physicians of the country are making an effort to improve medical care to citizens and their families is by the holding each year of a National Conference on Rural Health. It is recognized that those who live in the country have special problems which require attention.

For the past seven years a National Conference on Rural Health has been held under the auspices of a group in the American Medical Association known at first as the Committee on Rural Health and of late, The Council on Rural Health. Representatives of rural communities and physicians have gotten together to discuss rural needs and methods of meeting those needs.

This year's meeting of the Council will be held in Roanoke, Virginia, February 27-28. Dr. F. S. Crockett of Lafayette, Indiana, is chairman of the Council and will be among the speakers. Dr. Louis H. Bauer of Hempstead, New York, president of the AMA and Dr. John M. Travis of Jacksonville, Texas, who was chosen in December by the AMA as "General Practitioner of the Year," will also speak.

MINNESOTA SOCIETY OF NEUROLOGY AND PSYCHIATRY

The regular meeting of the Minnesota Society of Neurology and Psychiatry was held at the Town and Country Club in Saint Paul, January 13. The scientific program for the evening included Dr. Richard W. Anderson speaking on, "The Use of Electroshock in the Treatment of Hysteria," and Drs. Sidney K. Shapiro and William T. Peyton presented the topic, "Spontaneous Thrombosis of the Carotid Arteries."

CONTINUATION COURSE

The University of Minnesota announces a continuation course in *Proctology* which will be held at the Center for Continuation Study from April 6 to 11, 1953. The course is intended primarily for physicians engaged in general practice. All aspects of ano-rectal diseases

(Continued on Page 180)

It is

PRICELESS

yet, FREE

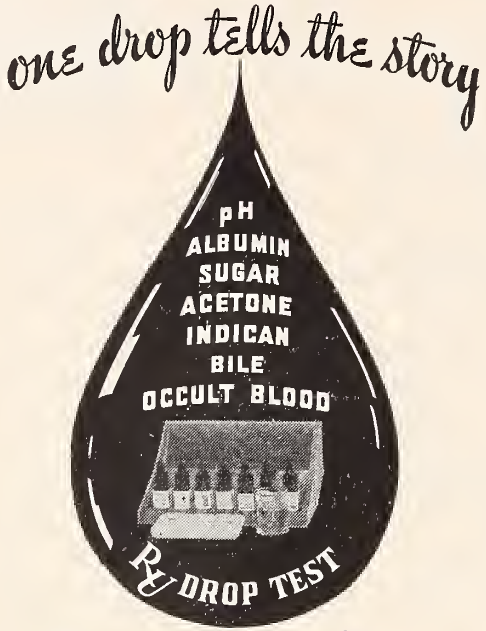
YES, the A. M. A. Council Seal
is awarded without payment
of any fee
or obligation to advertise.

The manufacturers submit their products on a purely voluntary basis. The evidence is reviewed—the claims are checked—the chemical laboratory makes the necessary tests and the results are examined by a critical group of physicians in various fields of medicine.

If the product is found satisfactory and necessary conditions are met, it is awarded Council Acceptance. This intensive examination by the Council is made without fee from the manufacturer—there is no payment of any sort made. The Council's actions are based on purely the available evidence—not any financial consideration.

If anyone tells you "they cannot afford Council Acceptance for their product," you can discount it 100%—the chances are that members of his firm are not familiar with Council Rules or Standards, or did not realize that the product could be acceptable to the Council.

This is one of a series of advertisements designed to explain the Councils' functions to you.



by simply adding ONE drop of urine to ONE drop of reagent, Ru Drop Test offers a clinically accurate method . . . Unconditionally Guaranteed . . . for the complete chemical screening of all urines by One Uniform Procedure in ONE MINUTE. A comprehensive brochure on One Minute Ru Test is available at your request

ORGO PRODUCTS COMPANY
WALTERIA, CALIFORNIA

AT YOUR CONVENIENCE, DOCTOR . . .

you are cordially invited to visit our new and modern prescription pharmacy located on the street floor of the Foshay Tower, 100 South Ninth Street.

With our expanded facilities we will be able to increase and extend the service we have been privileged to perform for the medical profession over the past years.

Exclusive Prescription Pharmacy

Biologicals Pharmaceuticals Dressings
Surgical Instruments Rubber Sundries

JOSEPH E. DAHL CO.
(Two Locations)
100 South Ninth Street, LaSalle Medical Bldg.
ATlantic 5445 Minneapolis

CONTINUATION COURSE

(Continued from Page 178)

will be covered, and two half-days will be devoted to operative clinics in which the registrants will take an active part. The visiting faculty will include Dr. Clarence Dennis, Professor and Chairman, Department of Surgery, State University of New York College of Medicine, New York City, who was formerly a member of the Department of Surgery at the University of Minnesota Medical School. The course will be presented under the direction of Dr. O. H. Wangensteen, Professor and Chairman, Department of Surgery; and Dr. Walter A. Fansler, Clinical Professor, and Director, Division of Proctology. The remainder of the faculty will include clinical and full-time members of the University of Minnesota Medical School and Mayo Foundation.

BLUE EARTH COUNTY SOCIETY

Dr. L. M. Hammar, of Mankato, was elected president of the Blue Earth County Medical Society at the annual meeting, held in December. Other officers elected were Dr. J. A. Butzer, Mankato, vice president; Dr. W. S. Chalgren, Mankato, secretary-treasurer; Dr. J. C. Vezina, Mapleton, delegate to the house of delegates of the state association, with Dr. R. G. Hankerson, Minnesota Lake, as alternate delegate. Dr. H. O. Morgan, Amboy, was elected to the board of censors.

ST. LOUIS COUNTY SOCIETY

Dr. R. P. Buckley of Duluth, succeeded Dr. P. F. Eckman as president of the St. Louis County Medical Society, January 8. Other officers installed at the annual meeting were Dr. M. O. Wallace, vice president; Dr. D. J. Van Ryzin, secretary-treasurer, and Dr. S. H. Boyer, Jr., president-elect for 1954. New state delegates were Drs. M. G. Gillespie and G. C. MacRae, with Dr. P. G. Boman and R. C. Pedersen as alternates.

The cost of preventable diseases imposes a staggering burden upon the human race. Every step that can be taken toward lessening this burden will not only diminish suffering and prolong human life; it will also increase productivity and promote prosperity.—C. E. A. Winslow, The Cost of Sickness and the Price of Health, WHO Monograph Series No. 7, 1951.

RADIUM RENTAL SERVICE
4340 W. 24TH STREET
MINNEAPOLIS 5, MINNESOTA
TEL. ATLANTIC 5297

Radium element prepared in type of applicator requested

ORDER BY TELEPHONE OR MAIL
PRICES ON REQUEST

Woman's Auxiliary

HENNEPIN COUNTY REPORTS ACTIVITIES

Mrs. Lawrence J. Leonard, President

The auxiliary year is already half over. Committee chairmen are alert and active and much has been accomplished. On October 3, the opening tea honoring officers and new members was held at the home of Dr. and Mrs. Elmer Rusten of Wayzata, which was attended by the state president, Mrs. C. L. Sheedy and some 230 members.

The November meeting included a silver tea for Sarahurst, which is a boarding home for discharged Glen Lake patients. On November 3, forty-nine members stuffed 24,000 Christmas Seal envelopes. The annual Glen Lake sale, November 13 and 14, held at Dayton's, netted $3,038.50. Members acted as salesladies and the Dayton Company donated space and services. The occupational therapist, Miss Lillian Bergren of Glen Lake Sanatorium, directed the sale of articles made by the patients and they, in turn, received the entire proceeds.

On December 8, the Auxiliary to the Minneapolis District Dental Society invited Hennepin County Medical Society auxiliary members to a tea at the home of Dr. and Mrs. Ralph Peterson. Over forty of the members attended this delightful event, which was carried out in a Hawaiian theme.

An auxiliary *News Letter,* now in its third edition, is receiving much favorable comment. Mrs. John Milton is the editor.

Hall, Anderson & Nordehn

PRESCRIPTION PHARMACY
BIOLOGICALS
PHYSICIANS' SUPPLIES

SAINT PAUL, MINN.

LOWRY MEDICAL ARTS BUILDING
TELEPHONE: CEDAR 2735

It had to be good
to get where it is
DRINK
Coca-Cola
REG. U. S. PAT. OFF.
Coca-Cola
TRADE MARK REGISTERED

THE COCA-COLA COMPANY

THE
MEDICAL PROTECTIVE
COMPANY
FORT WAYNE, INDIANA

PROFESSIONAL PROTECTION
EXCLUSIVELY
SINCE 1899

specialized service
assures "*know-how*"

MINNEAPOLIS Office:
Robert L. McFerran, Rep.,
2422 Clinton Ave. So., Apt. E-14,
Telephone Fillmore 1292

Cook County Graduate School of Medicine

POSTGRADUATE COURSES—1953

SURGERY—Intensive Course in Surgical Technic, two weeks, starting February 2, February 16, March 2
  Surgical Technic, Surgical Anatomy and Clinical Surgery, four weeks, starting March 2
  Surgical Anatomy and Clinical Surgery, two weeks, starting March 16
  Basic Principles in General Surgery, two weeks, starting March 30
  Gallbladder Surgery, ten hours, starting April 20
  Surgery of Colon and Rectum, one week, starting March 2
  General Surgery, one week, starting February 9
  General Surgery, two weeks, starting April 20
  Fractures and Traumatic Surgery, two weeks, starting March 2
GYNECOLOGY—Intensive Course, two weeks, starting February 16
  Vaginal Approach to Pelvic Surgery, one week, starting March 2
OBSTETRICS—Intensive Course, two weeks, starting March 2
PEDIATRICS—Intensive Course, two weeks, starting April 6
  Congenital Heart Disease, two weeks, starting May 18
MEDICINE—Intensive General Course, two weeks, starting May 4
  Electrocardiography and Heart Disease, two weeks, starting March 16
  Allergy, one month and six months, by appointment
UROLOGY—Intensive Course, two weeks, starting April 13
  Ten-Day Practical Course in Cystoscopy starting every two weeks
DERMATOLOGY—Intensive Course, two weeks, starting May 11

TEACHING FACULTY—ATTENDING
STAFF OF COOK COUNTY HOSPITAL

ADDRESS: REGISTRAR, 707 South Wood Street,
Chicago 12, Illinois

In Memoriam

FRED B. COLEMAN

Dr. Fred B. Coleman, formerly of Austin, Minnesota, died of leukemia at Long Beach, California, in November, 1952. He had retired and moved to California in 1934.

Dr. Coleman was born near Dodge Center, Minnesota, in 1874. He attended Hamline University, Saint Paul, and obtained his M.D. degree from the University of Minnesota in 1909. He was a member of the Mower County Medical Society, the Minnesota State Medical Association and the American Medical Association until 1934.

He served in the medical corps of the United States Army as a captain in World War I and was a fifty-year member of the Fidelity Lodge 391, A.F.&A.M. at Austin.

Surviving are two sisters, Mrs. Jessie A. Allen and Miss Helen A. Coleman, of Long Beach.

ASA J. HAMMOND

Dr. Asa J. Hammond, a resident of Minneapolis for forty-five years, died December 19, 1952, at the age of eighty-three.

Dr. Hammond was born at Lake City, Minnesota, May 8, 1869. He received his M.D. degree at the University of Minnesota in 1896 and practiced at Winnebago, Minnesota, from 1897 to 1907.

He was a member of the Hennepin County Medical Society, the Minnesota State Medical Association and the American Medical Association and a member of the staffs of St. Barnabas and Eitel Hospitals. He was also a member of the Minneapolis Masonic Lodge.

Dr. Hammond is survived by his wife, Eva, and two daughters, Mrs. Kenneth E. Kelley, Minnetonka Beach, and Mrs. John Campbell, Hopkins.

RUTH G. NYSTROM

Dr. Ruth G. Nystrom, of Minneapolis, died December 12, 1952. She was fifty-three years of age.

Dr. Nystrom was born August 1, 1899, at Adel, Iowa. She received her medical degree from the University of Minnesota in 1927 and took postgraduate work in European clinics in 1928 and 1929. She practiced gynecology and obstetrics and neuropsychiatry in Minneapolis except for a year spent in Kalamazoo, Michigan, in 1941 and 1942. She was a member of the Hennepin County Medical Society, the Minnesota State Medical Association and the American Medical Association.

Dr. Nystrom is survived by her mother, a sister and two brothers, all of Minneapolis.

WILLIAM C. RUTHERFORD

Dr. William C. Rutherford, formerly of Saint Paul, died in West Palm Beach, Florida, December 21, 1952.

Dr. Rutherford was born at Crookston, Minnesota, August 2, 1886. He obtained his medical degree from Marquette University, Milwaukee, in 1911 and practiced

North Shore Health Resort

Winnetka, Illinois

on the Shores of Lake Michigan

A completely equipped sanitarium for the care of
nervous and mental disorders, alcoholism and drug addiction
offering all forms of treatment, including electric shock.

SAMUEL LIEBMAN, M.S., M.D.

225 Sheridan Road **Medical Director** **Phone Winnetka 6-0211**

from 1911 to 1946 in Saint Paul. From 1918 to 1920, he served as a major in the Medical Corps of the United States Army.

He was a member of the Ramsey County Medical Society, the Minnesota State Medical Association and the American Medical Association. He was a member of the American College of Surgeons and was the national medical examiner for the Degree of Honor Protective Association, Saint Paul.

In 1946, he moved to Nisswa, Minnesota, and opened an office at Brainerd. In recent years, he motored south where he spent his winters in West Palm Beach. While practicing at Brainerd, he was a member of the Upper Mississippi Medical Society, the Elks Lodge and local Knights of Columbus.

Dr. Rutherford was married to Claire Gibbons, who preceded him in death in 1943. Two half-brothers, Francis A. Jenne, of Saint Paul, and Charles Jenne, of Kansas City, survive him.

HAROLD ROBERT STOWE

Word has been received of the death of Dr. Harold Robert Stowe, former fellow in surgery of the Mayo Foundation, which occurred on December 1, 1952, at Council Bluffs, Iowa.

Dr. Stowe was born May 1, 1917, at Council Bluffs, Iowa. He attended the University of Omaha from 1934 to 1937 and received the degree of M.D. from the University of Nebraska in 1941. He interned at the Ancker Hospital at Saint Paul, Minnesota, from July, 1941, to October, 1942. He entered the Mayo Foundation as a fellow in surgery in October, 1947, and left the Mayo Foundation in December, 1951. He received the degree of M.S. in Surgery from the University of Minnesota on July 24, 1952.

Dr. Stowe was on active duty with the Medical Corps of the United States Navy from October, 1942, to July, 1947. He was a member of the Alumni Association of the Mayo Foundation.

KARL CHRISTIAN WOLD

Dr. Karl C. Wold, a well-known eye specialist of Saint Paul, died on December 24, 1952, at Princeton, New Jersey, where he was visiting his daughter, Mrs. Robert Johnson.

Dr. Wold was a native of Saint Paul, having been born there July 28, 1891. He graduated from the University of Minnesota Medical School in 1914 and interned at Bethesda Hospital, Saint Paul. He took postgraduate training at the Illinois Eye and Ear Infirmary, Chicago, and the University of Minnesota Department of Ophthalmology in 1915 and at the Chicago Eye, Ear, Nose and Throat Hospital in 1916.

Dr. Wold was a diplomate of the American Board of Ophthalmology (1923) and a member of the Minnesota Academy of Ophthalmology and Otolaryngology, serving as president of the Academy in 1945-1946. He was a Fellow of the American College of Surgeons (1924) and served as chief of staff at Bethesda Hospital three different times. He was an active member of the Ramsey County Medical Society, the Minnesota State Medical Association and the American Medical Association. He served as a member of the Board of Directors of the Saint Paul Athletic Club from 1943 to 1945.

He lived at Dellwood, White Bear Lake, during the summers for many years and was captain of the White Bear Yacht Club for a number of years, taking a great interest in yacht racing activities. He also served as Commodore of the club.

Dr. Wold acquired considerable notoriety following the publication, in 1949, of his book entitled "Mr. President—How is Your Health." He became interested in the subject in 1941 and carried out considerable research for material for his book. His statement that President Franklin D. Roosevelt had suffered four strokes was denied by members of the President's family, but Dr. Wold did not retract his assertion. He advocated that before renomination presidents should undergo physical examinations by an impartial board.

Dr. Wold was a veteran of World War I. He is survived by his wife, Mabel, two sons, Dr. Keith Wold of Saint Paul and Sidney of Grand Forks, North Dakota; two daughters, Mrs. Robert Johnson of Princetion, New Jersey, and Mrs. John Strong of Austin, Minnesota.

Dr. Wold was an able oculist and his ability and pleasing personality procured him a large clientele and a host of friends.

Communication

To the Editor:

The American Cancer Society announces that the first four issues of its well-known monograph series are being reprinted. Copies of the following monographs will be available without charge to physicians in Minnesota:

1. *The Cancer Problem,* by Dr. Shields Warren
2. *Cancer of the Head and Neck,* by Dr. Hayes Martin
3. *The Diagnosis of Genitourinary Neoplasms,* by Dr. Victor F. Marshall
4. *Mouth Cancer and the Dentist,* by Dr. Hayes Martin

The Cancer Society has had thousands of requests for these monographs from physicians whose names were not yet on our mailing lists. Requests for back issues and future issues of the monographs may be made by writing the American Cancer Society, 295 North Snelling Avenue, St. Paul 4.

Yours very truly,

ALLAN STONE,
Executive Director, Minnesota Division
American Cancer Society, Inc.

Saint Paul, Minnesota

January 20, 1953

AUTHORIZED DEALER
for
A.C.M.I. Products

Cystoscopes
Resectoscopes
Telescopes
Cutting Loops
Catheters
Urological Accessories

We solicit your mail and telephone orders.

C. F. ANDERSON CO., INC.
901 MARQUETTE AVE.
MINNEAPOLIS, MINN.

Complete Line of Medical Instruments and Equipment.

Minneapolis—ATlantic 6508 **St. Paul—ZEnith 2055**

Patients' Lounge

Saint Paul's Exclusive

CRESTVIEW
NEUROPSYCHIATRIC
HOSPITAL

New . . Modern . . Complete . .

Providing the highest standard of service at the lowest cost.

- Occupational therapy and recreational department.
- Complete X-ray and laboratory.
- Electrocardiography—basal metabolism.
- Electroencephalography available.
- All patients rooms air-conditioned.
- Background music and psychotherapy sound equipment.
- Medically staffed by every neurologist and psychiatrist in Saint Paul.
- Especially trained nursing staff.

MEMBER of the American Hospital Association
MEMBER of the Minnesota Hospital Association
APPROVED by the Minnesota State Medical Association
and the Ramsey County Medical Society.

CRESTVIEW HOSPITAL • 145 W. College Ave., St. Paul
GArfield 5841

A non-profit organization

Theocalcin

For the Failing Heart of Middle Life

Prescribe 2 or 3 tablets of Theocalcin, t. i. d. After relief is obtained, continue with smaller doses to keep the patient comfortable. Theocalcin strengthens heart action, diminishes dyspnea and reduces edema.

Brand of theobromine-calcium salicylate,
Trade Mark reg. U. S. Pat. Off.

Bilhuber-Knoll Corp. Orange, N. J.

Of General Interest

Dr. Leslie C. Lane, ninety-seven, was honored in December as the oldest living graduate of the Rush Medical School of Chicago. Dr. Lane has practiced medicine in Minneapolis, Benson and Ortonville, since he came to Minnesota in 1861.

* * *

Dr. C. Kenneth Cook of Saint Paul, has been named chief of staff of St. John's Hospital for the coming year; Dr. T. S. McClanahan, White Bear Lake, vice president; Dr. C. R. Tifft, Saint Paul, second vice president, and Dr. Frank J. Milnar, Saint Paul, secretary, at the annual meeting of the medical staff, held December 8, 1952, at the hospital. **Drs. Francis J. Crombie** and **Robert W. Emmons**, both of Saint Paul, were named to the board of directors.

* * *

Dr. Neil D. Nickerson, Thief River Falls, attended a postgraduate course in gastroenterology at the University of Pennsylvania, the first week in December.

* * *

Dr. R. R. Remsberg, Tracy, attended the semi-annual McKennan Hospital staff clinic at Sioux Falls, South Dakota, December 3. The clinic program included discussion of modern trends in medicine generally, and the treatment of patients following radioactive warfare.

* * *

Dr. F. J. Hirschboeck, Duluth, a past president of the Minnesota Heart Association, spoke on the treatment of heart diseases to the twenty-eighth safety school, sponsored by the Duluth Chamber of Commerce Safety Bureau, held December 10, at the Hotel Duluth.

* * *

Dr. Sam H. Boyer, Jr., was named president-elect of the St. Louis County Medical Society at the meeting held December 11, at Duluth. **Dr. R. P. Buckley** was the incoming president and **Dr. Philip F. Eckman,** the retiring president.

* * *

Dr. Robert R. Kierland, consultant in dermatology and syphilology in the Mayo Clinic and associate professor in the Mayo Foundation, spoke on allergies at the eleventh annual meeting of the American Academy of Dermatology and Syphilology, held December 10, at Chicago.

* * *

Dr. M. Clifford Florine purchased the practice of the late **Dr. Clifford Wadd** (Dr. Wadd was killed in a highway accident in the fall of 1952) in Janesville and began practice in December. Dr. Florine is a graduate of the University of Minnesota Medical School and interned at Gorgas Hospital in the Canal Zone. From 1941 to 1945, he was with the engineering division at the Canal Zone.

A tour of the Variety Heart Hospital was conducted by staff doctors—**Richard Smith, Paul Winchell, Lewis Thomas** and **R. V. Ebert**—as part of the education program of the chairmen of the 1953 Heart Fund, at a meeting held at the Heart Hospital for fund drive orientation.

* * *

Dr. James A. Johnson, president, Hennepin County Chapter, American Cancer Society, and **Dr. Harold S. Diehl,** University Medical School dean, spoke at a cancer workshop December 8, held at Coffman Union on the University Campus.

* * *

Dr. Arthur Hunt, Rochester, was elected president of the Minnesota Obstetrical and Gynecological Society at its fall meeting, held December 6 in Minneapolis. He succeeds **Dr. John Haugen,** Minneapolis. **Dr. Arnold Swenson,** Duluth, was named vice president and **Dr. Rodney Sturley,** Saint Paul, was re-elected secretary-treasurer.

* * *

Dr. Frederick A. Figi, and **Dr. John B. Erich,** of the Mayo Clinic, won a first place award at the eleventh annual meeting of the American Academy of Dermatology and Syphilology for an exhibit on tumors of blood vessels.

* * *

Gifts totalling $300,000.00 for research and scholarships at the University of Minnesota were announced by the board of regents, December 12. The funds granted to further the interests of medicine were as follows:

Dr. John Wild was granted $21,616 to perfect instrumentation for the echograph, the ultrasonic device for detecting cancer.

Dr. F. John Lewis was granted $6,370 for additional experimental cardiac surgery.

Sharing in the $102,000 cancer grants from the United States Public Health Service, were **Dr. George Moore,** cancer co-ordinator, $25,000 for teaching and clinical work, and **Dr. Jerome T. Syverton,** head of the department of bacteriology and immunology, $15 000 for research on mouse mammary cancer and leukemia.

Also included in the United States Public Health Service grants were **Dr. Frederic Kottke,** head of the department of physical medicine, $18,078, and **Dr. Yoshio Sako,** fellow in surgery, $7,036.

* * *

Dr. E. H. Hartung, of Claremont, was selected physician for the Fairview Nursing Home by the Dodge County commissioners, at the meeting held December 2, at Claremont.

* * *

Dr. D. C. Balfour, Rochester, has been notified by the permanent secretary of the Académie Nationale de Médecine of France, that he was elected

Did you have any tax-exempt income in 1952?

TAXABLE INVESTMENT INCOME is your most expensive income since, under our progressive income tax system, it is this *"Top Layer"* income that pays the heaviest taxes.

There is little a taxpayer can do about his taxable income received from:

Professional Income
Salaries
Business Profits
Dividends from Business

These are main sources of revenues—your basic income. *"Top Layer"* income, however, your investment income, is something that you definitely have control over in that it is within your power to give such income either a "taxable" or a "tax-free" status.

The income from investments which is subject to taxation actually shrinks whenever your professional income increases and forces this taxable *"Top Layer"* income into a higher bracket. In other words, the more your active earning power is increased, the greater percentage of your taxable investment income will be paid out in taxes.

Interest income on Municipal Bonds is exempt from all present Federal Income Taxes and consequently provides a *"Top Layer"* income that remains constant regardless of changes in other income or tax rates.

The two following examples clearly demonstrate the effect of Federal Income taxes on *"Top Layer"* income:

If you are in the $12,000-$14,000 individual income tax bracket and purchase an investment to yield 3.00% you will realize about 1.55% if the income is taxable but will receive the full 3.00% if it is not taxable.

If you are in the $20,000-$22,000 individual income tax bracket and purchase an investment to yield 3.00% you will realize about 1.15% if the income is taxable but will receive the full 3.00% if it is not taxable.

We shall be pleased to send you information and descriptive circulars pertaining to Municipal Bonds.

JURAN & MOODY
MUNICIPAL SECURITIES EXCLUSIVELY

TELEPHONES
Garfield 9661
Prior 6423

GROUND FLOOR
93 E. Sixth Street
St. Paul 1, Minnesota

a corresponding member of the Académie, in the Section of Surgery, Obstetrics and the Surgical Specialties.

* * *

Dr. Ralph E. Worden, former fellow in physical medicine of the Mayo Foundation, recently was appointed director of a new rehabilitation center at the Ohio State University at Columbus.

* * *

Dr. Mildred Schaffhausen, interning at Minneapolis General Hospital, was awarded the scholarship citation and $100 from the American Women's Medical Association, in December. Dr. Schaffhausen has had a 97.5 average during her four years at the University of Minnesota Medical School.

Officers for the coming year elected by the Freeborn County Medical Society at its annual meeting in December were **Dr. C. E. J. Nelson,** Albert Lea, president; **Dr. T. M. Hansen,** Albert Lea, vice president, and **Dr. L. E. Steiner,** Albert Lea, secretary-treasurer.

* * *

Dr. Robert I. Gruys and **Dr. John A. Watkins** opened a practice in Wells in December, in the former offices of Dr. W. H. Barr. Both Dr. Gruys and Dr. Watkins are graduates of the University of Minnesota Medical School. Dr. Watkins recently returned from Korea.

* * *

A new television set was donated to the Nopeming

Sanatorium at Nopeming by the Military Order of the Purple Heart, Duluth chapter, in December. **Dr. G. A. Hedberg**, chief physician, accepted the gift on behalf of the sanatorium.

* * *

Dr. A. J. Olson, Owatonna, was named chairman of the second Steele County x-ray survey program which will begin February 16.

* * *

"The Doctors Mayo," by Helen Clapesattle, editor of the University of Minnesota Press, was recently published in Brazil. The book was originally published in this country in 1941. The Portuguese edition was published under the book translation program of the United States Department of States international information administration.

* * *

Dr. Robert A. Stoy, Little Falls, was recalled to Army service in December. Dr. Stoy has been practicing in Little Falls since May, 1949, with **Drs. D. L. Johnson, Alfred H. Benson** and **William Skaife**.

* * *

Officers elected at the Fairmont Community Hospital's annual staff meeting were: **Dr. V. M. Vaughan**, Truman, president; **Dr. E. E. Zemke**, Fairmont, vice president, and **Dr. A. L. Ourada**, Ceylon, secretary-treasurer.

* * *

Dr. L. F. Johnston, Winona, attended the meetings of the American Academy of Obstetrics and Gynecology, held in Chicago, December 15 to 17.

SERVICE BROWN & DAY INC SAINT PAUL USA QUALITY

For

Professional Supplies

and

Service

BROWN & DAY, INC.

St. Paul 1, Minnesota

* * *

Officers elected to the staff of St. Joseph's Hospital at Mankato at the annual meeting December 11, were: **Dr. A. A. Schmitz**, president; **Dr. J. A. Butzer**, vice president, and **Dr. J. C. Von Drasek**, secretary-treasurer. Members of the executive committee named were **Dr. M. I. Howard**, chairman, and **Drs. R. G. Hasset** and **J. A. Butzer.**

* * *

Dr. John Delmore of Roseau, was named to succeed **Dr. M. D. Starekow** of Thief River Falls, as president of the Red River Valley Medical Society, at the annual election meeting, held at Crookston, December 12. **Dr. Anthony Berlin** of Hallock, was elected vice president, and **Dr. R. O. Sather** of Crookston, re-elected secretary-treasurer. Delegate named to the Minnesota State Medical Association for a three-year term was **Dr. C. H. Holmstrom** of Warren, with **Dr. J. H. Cameron** of Crookston, as alternate. **Dr. W. W. Rieke** of Wayzata spoke to the group on public health measures in schools.

* * *

Axel C. Benson, "head doctor" for forty-two years at Swedish Hospital, will retire in March on his seventieth birthday and go to Florida. Mr. Benson has been "doctoring" heads of hospital patients at Northwestern and Mt. Sinai Hospitals, as well as Swedish Hospital during the last two years since his brother, who was also a barber, died.

* * *

The residence of the late **Dr. and Mrs. W. J. Mayo**, located adjacent to the Mayo Foundation House, will become an adjunct to the house, the Mayo Association announced in December. The house will be called Damon House in honor of Mrs. Mayo, whose maiden name was Hattie Damon.

Some of the rooms are being refurnished. Portraits of Dr. and Mrs. W. J. Mayo are being painted by Bjorn Egeli of Washington, D. C. The portraits, which will be gifts of **Dr. and Mrs. Donald C. Balfour, Sr.**, and **Dr. and Mrs. Waltman Walters**, will hang in one of the two houses.

* * *

Dr. Richard Carlton Lillehei, son of **Dr. and Mrs. Clarence I. Lillehei**, of Edina, and Betty Jeanne Larsen, of Minneapolis, were married December 20, in the Church of St. Stephen the Martyr at Edina. **Dr. C. Walton Lillehei**, University of Minnesota Hospitals, brother of the groom, was best man and **Dr. James P. Lillehei**, Veterans Administration Hospital, Ft. Snelling, another brother, was an usher. Both Dr. and Mrs. Lillehei were graduated from the University of Minnesota. Dr. Lillehei is a resident in surgery at the University Hospitals.

* * *

Dr. J. M. Gacusana, Hot Springs, South Dakota, will begin practice in Mahnomen, March 1. Dr. Gacusana served as an administrator of the hospital at White Earth for a period of time around 1945, so he is familiar with the Mahnomen area.

WHERE
ALCOHOLICS
ACHIEVE
INSPIRATION
FOR
RECOVERY

Where gracious living, a homelike atmosphere and understanding companionship contribute to successful rehabilitation.

200 acres on the shores of beautiful Lake Chisago

The methods of treatment used at the Hazelden Foundation are based on a true understanding of the problem of alcoholism. Among the founders of the nonprofit Hazelden Foundation are men who have recovered from alcoholism through the proved program of Alcoholics Anonymous and who know the problems of the alcoholic. All inquiries will be kept confidential.

HAZELDEN FOUNDATION

Lake Chisago, Center City, Minn. Telephone 83

Dr. Kathleen Jordan, of Riverside Sanatorium, Granite Falls, who is also a physician for the Christmas Seal organization, is busy with a tuberculin testing survey of the people of Lyon County.

* * *

Dr. Robert P. Meyer, Faribault, spoke at the regular weekly meeting of the Faribault Rotary Club, December 31. His subject was "The Detection of Cancer."

* * *

Dr. S. C. Blackmore, who has owned and operated the Bray Hospital at Biwabik for the last two years, has sold the buildings to Mrs. Harold Johnson, former county nurse in the area, who will begin operation of a private rest home early in 1953.

Dr. Blackmore will continue to have an office in the building and will maintain his practice as usual.

* * *

Dr. James Reinhardt, originally from Detroit Lakes, began practice in Alexandria early in January. Dr. Reinhardt received his medical degree from Temple University in Philadelphia in 1947, and completed his internship at Northwestern Hospital, Minneapolis.

* * *

Dr. Frank Heck, Mayo Clinic staff, was married to Dr. Louise M. Paul, Wakefield, New Hampshire, in December.

* * *

Dr. Wesley Spink, professor of medicine at the University of Minnesota, was one of ten doctors to receive awards for distinguished achievement in 1953 from *Modern Medicine*. Dr. Spink was cited for leading the development of preventive measures and treatment of brucellosis.

* * *

Dr. Orwood J. Campbell, Minneapolis, who became president of the Minnesota State Medical Association, January 1, will preside over the centennial celebration scheduled for this year in honor of the founding of the State Medical Association in 1853.

* * *

Dr. J. F. DuBois, Jr., Sauk Centre, was elected president of the medical staff of St. Michael's Hospital in Sauk Centre at the staff's annual meeting, held December 16. **Dr. A. H. Borgerson,** Long Prairie, was elected vice president, and **Dr. W. D. Cleaves,** Sauk Centre, secretary.

* * *

Dr. W. E. Herrell, of the Mayo Clinic staff, was quoted in an article appearing in the December issue of *The Ladies Home Journal.* Written by William L. Laurence, the article was entitled, "Lifesaving Drugs Can Harm You." What medical leaders in the field have said about the danger of indiscriminate use of the various antibiotics was emphasized throughout the article. A statement by Dr. Herrell, made at a meeting of the American Therapeutic Society in Chicago—"There is nothing wrong with the antibiotics—the trouble is with the people prescribing them," was quoted.

The Birches Sanitarium, Inc.

2391 Woodland Avenue
Duluth 3, Minnesota

A hospital for the care and treatment of Nervous and Mental disorders. Quiet, cheerful environment. Specially trained personnel. Recreational and occupational therapy.

Dr. L. R. Gowan, M.D., M.S., Medical Director

Dr. John Austin Culligan, Rochester, son of **Dr. and Mrs. John M. Culligan** of Saint Paul, was married to Miss Sheila Spriggs of Rochester, December 27, in Saint Paul. **Dr. John Phelan** of Duluth and **Dr. Bernard Spencer** of Rochester were two of the ushers. Dr. Culligan is on leave from a fellowship with the Mayo Foundation to serve with the navy medical corps.

* * *

The Estrem Clinic at Fergus Falls has now moved into a new, larger building and has a new name—the Park Region Medical Center. Medical staff of the center includes **Drs. Carl O. Estrem** and **Emmett A. Heiberg**, general medicine; **Dr. Glenn J. Mouritsen**, internal medicine and skin diseases; **Dr. Carl J. T. Lund**, obsetrics and gynecology; **Dr. Robert D. Estrem**, surgery; **Dr. Ralph L. Estrem**, internal medicine and x-ray, and **Dr. Rolf Daehlin**, children's diseases and obstetrics. An ophthalmologist is expected to join the staff in the spring.

* * *

Three Thief River Falls physicians—**Drs. Philip Parker, Forrest Rowell, Jr.**, and **Ted Bratrud**—will staff the Oklee Medical Clinic until a resident physician can be found. This arrangement began December 19.

* * *

Dr. D. C. Anderson, Olivia, was called back into active military service and closed his office December 26. He was assigned to the Naval Air Station at Pensacola, Florida.

* * *

Dr. Frank W. Reibold was elected president of the staff of St. Mary's Hospital, Duluth, at the staff meeting held December 24. Other officers named were **Dr. Joseph H. Weisberg**, vice president; and **Dr. Milton Finn**, secretary-treasurer.

* * *

"The Doctors' Roundtable," a WCCO-TV program on Sunday, December 28, featured **Dr. J. Arthur Myers**, professor of medicine and public health at the University of Minnesota; **Dr. John F. Briggs**, chief of medicine at Ancker Hospital in Saint Paul, and **Dr. Ezra V. Bridge**, superintendent of Mineral Springs Sanatorium, Cannon Falls. The doctors discussed diseases other than tuberculosis which are discovered as a result of chest x-ray programs.

Dr. George B. Eusterman, emeritus member of the Mayo Clinic staff, was appointed chief of medicine and director of education of Sinai Hospital in Detroit, Michigan, in December. Dr. Eusterman received his medical degree from the University of Minnesota in 1908 and joined the Mayo Clinic staff the same year.

* * *

Three new physicians on the Rochester State Hospital staff are **Dr. Frances M. Richards**, internal medicine, and **Drs. Conrad W. Baars** and **Ralph T. Taubert**, psychiatrists.

Dr. Richards was graduated from the University of Alberta, Canada, Medical School and interned at Minneapolis General Hospital.

Dr. Baars, a 1945 graduate of the University of Amsterdam, Holland, Medical School, came to the United States in 1946, on a fellowship to Lorrette Hospital, Chicago. He spent a year's residency in psychiatry at Minneapolis General Hospital and served fifteen months as psychiatrist and acting clinical director at Anoka State Hospital. Recently Dr. Baars returned from active military duty at the Specialized Medical Center, Camp Cooke, California.

Dr. Taubert was graduated from the University of Michigan Medical School in 1949 and then interned at Minneapolis General Hospital. He was on the staff of the Hastings State Hospital before coming to Rochester.

Drs. Donald and **Gloria Taylor** have resigned to go into private practice in San Diego and **Dr. D. E. McBroom** has retired.

* * *

Dr. A. J. Chesley, director, Minnesota State Board of Health; **Dr. W. W. Barr**, deputy director, and **Dr. Helen L. Knutson**, director of the division of hospital services, represented the State Board of Health at a meeting, held at Thief River Falls, December 17, to discuss the future of Oakland Park Sanatorium. Reorganization of existing facilities for care of tuberculosis patients over the state is under way.

* * *

Dr. Lewis Hanson, Frost, was recently appointed by the county commissioners to serve on the Faribault County Public Health Nursing Advisory Board as its medical director. **Dr. R. G. Hankerson,** Minnesota Lake, has been the medical director since the public health nursing service was established in 1946.

* * *

Dr. Howard R. Hartman, a member of the permanent staff of the Mayo Clinic since 1919, and head of a section in the division of medicine since 1938, retired from the Clinic, December 31. Dr. Hartman, who gained national recognition as an authority on the stresses and afflictions to which busy executives may be peculiarly susceptible, came to Rochester as an intern on July 1, 1914. He was graduated from the University of Michigan Medical School.

* * *

Many doctors from the area attended the doctors and editors Press-Radio-Medical dinner meeting, held at Brainerd, December 13. Discussion leaders for the program were **Dr. Hadden Carryer,** Mayo Clinic; Carl C. Carlson, Editor, *Long Prairie Leader;* Ed Tom O'Brien, Brainerd, owner of Radio Station KLIZ, and Manley Brist, Saint Paul, attorney for the Minnesota State Medical Association.

* * *

Dr. Donald Myhren Larson, Chicago, son of **Dr. and Mrs. Clarence Myhren Larson,** Minneapolis, was married to Miss Florence May Cadwell of Springfield, Illinois, December 27, at Chicago. **Dr. Roger Clarence Larson** of Washington, was his brother's best man.

Dr. E. T. Leddy, Mayo Clinic, addressed a meeting of the staff of the Veterans Administration Hospital in Grand Island, Nebraska, December 18, on "Some Combinations of Radiologic and Surgical Methods Worthwhile in the Treatment of Cancer."

* * *

Dr. J. C. Westenberger, of Austin, moved his offices from the downtown district to his residence in December. Dr. Westenberger has practiced medicine for fifty-five years and plans to retire soon. He will continue his practice for a time from his residential office, however.

* * *

Research grants approved upon recommendation of the National Advisory Arthritis and Metabolic Diseases Council of the Public Health Service for February, 1951 to June, 1952, totaled $1,743,839, some $670,000 being in the field of metabolism, $510,000 in arthritis research, and the balance scattered. Support has been provided for 170 research projects in seventy-nine institutions, located in thirty-two states, the District of Columbia, and three foreign countries. The National Institute of Arthritis and Metabolic Diseases which was established by Congress in 1950, within the Public Health Service is directed by Dr. Russell M. Wilder. Some seventy-eight beds in the new clinical center about to be opened at Bethesda, Maryland, have been allocated to this institute. In addition to this government-supported project the Arthritis and Rheumatism Foundation

ACCIDENT • HOSPITAL • SICKNESS

INSURANCE

For Physicians, Surgeons, Dentists Exclusively

ALL PREMIUMS COME FROM PHYSICIANS SURGEONS DENTISTS ALL CLAIMS GO TO

$5,000 accidental death Quarterly $8.00
$25 weekly indemnity, accident and sickness

$10,000 accidental death Quarterly $16.00
$50 weekly indemnity, accident and sickness

$15,000 accidental death Quarterly $24.00
$75 weekly indemnity, accident and sickness

$20,000 accidental death Quarterly $32.00
$100 weekly indemnity, accident and sickness

COST HAS NEVER EXCEEDED AMOUNTS SHOWN

ALSO HOSPITAL INSURANCE

	Single	Double	Triple	Quadruple
60 days in Hospital	5.00 per day	10.00 per day	15.00 per day	20.00 per day
30 days of Nurse at Home	5.00 per day	10.00 per day	15.00 per day	20.00 per day
Laboratory Fees in Hospital	5.00	10.00	15.00	20.00
Operating Room in Hospital	10.00	20.00	30.00	40.00
Anesthetic in Hospital	10.00	20.00	30.00	40.00
X-Ray in Hospital	10.00	20.00	30.00	40.00
Medicines in Hospital	10.00	20.00	30.00	40.00
Ambulance to or from Hospital	10.00	20.00	30.00	40.00
COSTS (Quarterly)				
Adult	2.50	5.00	7.50	10.00
Child to age 19	1.50	3.00	4.50	6.00
Child over age 19	2.50	5.00	7.50	10.00

$4,000,000.00
INVESTED ASSETS

PHYSICIANS CASUALTY ASSOCIATION
PHYSICIANS HEALTH ASSOCIATION

$19,500,000.00
PAID FOR CLAIMS

51 years under the same management
400 First National Bank Building
Omaha 2, Nebraska

$200,000.00 deposited with State of Nebraska for protection of our members

HOMEWOOD HOSPITAL is one of the Northwest's outstanding hospitals for the treatment of Nervous Disorders—equipped with all the essentials for rendering high-grade service to patient and physician.

Operated in Connection with
Glenwood Hills Hospitals

HOMEWOOD HOSPITAL
Corner Penn and Plymouth Avenues North
Minneapolis Minnesota

is the principal voluntary agency devoted to the solution of the arthritis problem and it is supported by annual nation-wide fund-raising campaigns.

* * *

Dr. F. J. Hirschboeck and **Dr. Gordon Strewler** were elected directors of the David L. Tilderquist Memorial Library Association of Duluth, at the annual meeting, held January 8.

* * *

Dr. Carl B. Thuringer, Rochester, became associated in practice with **Dr. P. L. Halenbeck** and **Dr. Robert R. Petersen** in the Granite Exchange Building, St. Cloud, in January. Dr. Thuringer received his medical degree from the University of Oklahoma, interned at St. Anthony's Hospital in Oklahoma City and then spent two years in the army medical corps. In 1949, Dr. Thuringer entered the Mayo Clinic on a fellowship in general surgery which he recently completed.

* * *

Contributions to the American Medical Education Foundation in 1952 totaled more than $886,430. This includes the grant of $500,000 voted by the House of Delegates in December, 1951. An equal grant was voted by the House of Delegates in December, 1952. During the year 1952, 6,739 contributions were received from 6,697 individuals, eleven laymen, and thirty-one organizations. This was 4,863 more contributors than in 1951.

* * *

Dr. M. M. Hargraves, Mayo Clinic physician who is known for his knowledge and practice of land conservation, was featured in the *Saint Paul Sunday Pioneer Press* (Jan. 4, 1953, Pictorial Section) for his accomplishments aside from medicine. As a doctor, Dr. Hargraves is internationally known for his work on blood and bone marrow.

* * *

Dr. Milan E. Knapp of Minneapolis, spoke in Willmar, January 5, at a March of Dimes benefit supper given by the Kandiyohi County March of Dimes Chapter.

* * *

Dr. Robert H. Alway, a graduate of the University of Minnesota medical school, has been named chief of pediatrics at the National Jewish Hospital, Denver, Colorado.

Dr. D. C. Balfour, of the Mayo Clinic, who suffered a heart attack on Christmas Day, is recovering satisfactorily at the Worrall Hospital.

* * *

The National Foundation for Infantile Paralysis has been providing financial assistance yearly since 1949 to the Committee on Careers in Nursing which is endeavoring to recruit students for both professional and practical nursing schools. The grant this year will be $35,837. The work of the Foundation is handicapped by the lack of nurses, the shortage for civilian need alone being some 50,000.

* * *

Dr. Robert A. Rosenthal, Saint Paul pediatrician, spoke on "Medicine and Shakespeare" at the meeting of the senior members of the Women's City Club, held January 14, in Saint Paul. Dr. Rosenthal is a student of Shakespeare.

* * *

Dr. George Haggard, retired Minneapolis physician, was honored in the news recently for his long years of practice in Minnesota. Dr. Haggard was formerly a machinist and worked for the Milwaukee Road but decided to go to medical school, graduating at the age of thirty-six. In spite of his late start, Dr. Haggard conducted his medical practice for sixty years.

* * *

Dr. S. C. Blackmore, of Biwabik, lectured on heart disease at a meeting of the American Legion Auxiliary, January 20.

* * *

Dr. John J. Heisler, Richfield health officer, resigned in January to leave for service with the army medical corps.

* * *

The eighty-nine member chapters of the Muscular Dystrophy Association of America has just completed its second annual crusade to raise funds for research as to the cause of this disease, which is purported to affect more than 100,000 persons in the country, for the most part youngsters destined to die young. Muscular dystrophy research projects have been established in seventeen laboratories in the United States and abroad. This humanitarian project merits the support of the public. Contributions may be sent to local Chapters or to the Muscular Dystrophy Association, New York 8, New York.

* * *

Dr. John Mastin Travis, of Jacksonville, Texas, was named the General Practitioner of the Year by the House of Delegates at the clinical session of the AMA held in Denver in December. Dr. Travis, a general practitioner for the past forty-five years, has been most active in civic affairs, a leader in the promotion of public health and sanitation in the East Texas area particularly, and active in medical affairs.

* * *

Dr. Howard A. Rusk, director of the Institute of Physical Medicine and Rehabilitation of the New York University—Bellevue Medical Center, has been named as the 1952 winner of the $10,000 Dr. C. C. Criss Award and gold medal in recognition of his work in rehabilitating the physically handicapped. The award was established by Mutual Benefit Health and Accident Association of Omaha to honor outstanding contributors to the fields of health and safety. Winners in 1951 were **Dr. Edward C. Kendall,** bio-chemist, and **Dr. Philip S. Hench,** of Rochester. Awards are not limited to physicians, but Dr. Rusk was chosen from a list of some 150 nominees by a board of judges composed of prominent men and women in various fields, including **Dr. John W. Cline** and **Dr. C. W. Mayo.**

* * *

Dr. Owen H. Wangensteen, chairman of the University of Minnesota medical school department of surgery, spoke at the dedication of a new $450,000 hospital at Hudson, Wisconsin, January 18.

* * *

Dr. Frank G. Farley, joined the staff of the Adams Clinic at Hibbing in January. Dr. Farley is a graduate of Syracuse College of Medicine and served two years in the army medical corps. Recently he completed four years of specialized training in surgery.

* * *

Dr. Henry L. Taylor, of the University of Minnesota staff, spoke to the Braham Area PTA on "You, Your Heart and the Future," January 19.

* * *

Dr. H. W. Meyerding, of the Mayo Clinic, was elected to Fellowship in the New York Academy of Sciences at the annual meeting, held recently in New York City. Dr. Meyerding was honored in recognition of his outstanding scientific achievements.

* * *

Dr. George F. Allen, Veterans Administration Hospital, Batavia, New York, started as assistant medical director at Mineral Springs Sanatorium, January 3. Dr. Allen received his medical degree from the University of Rochester, Rochester, New York, and did research work in biological sciences at Johns Hopkins Hospital in Baltimore. He served in the army for three years, including overseas duty in the Pacific Theatre.

* * *

Dr. Lyle A. French, neuro-surgeon, Minneapolis, gave a medical lecture at the Ft. Meade Veterans

COMPLETE
OPHTHALMIC
SERVICE
FOR THE
PROFESSION

Benson
OPTICAL COMPANY

Laboratories in
Minneapolis and
Principal Cities of
Upper Midwest

Since 1913

COMPLETE
Laboratory Service
IN
Deep X-Ray Therapy
Roentgen Diagnosis
Radium Treatment
Radium Rentals
Clinical Biochemistry
Clinical Pathology
Tissue Examination
Clinical Bacteriology
Interpretation of YOUR E.K.G. records
Toxicological Examinations

MURPHY LABORATORIES
—Est. 1919
Minneapolis: 612 Wesley Temple Bldg., At. 4786
St. Paul: 348 Hamm Bldg., Ce. 7125
If no answer call: 222 Exeter Pl., Ne. 1291

Hospital, South Dakota, in January. Dr. French addressed the group of Black Hills physicians on "Head Injuries."

* * *

Dr. George Flora, who recently returned from service with the army in Korea, began practice with Dr. F. S. Howe in Leads, South Dakota, in January. Dr. Flora took his internship at St. Barnabas Hospital in Minneapolis.

* * *

Dr. David A. Boyd, Jr., of the Mayo Clinic, was re-elected secretary-treasurer of the American Board of Psychiatry and Neurology at a meeting of the Board, held recently in New York.

* * *

Dr. John Boehrer was elected chief of staff of Abbott Hospital, January 6. He succeeds **Dr. O. S. Wyatt.** Other officers named included **Dr. John Pewters,** vice president, and **Dr. John Tobin,** secretary.

* * *

Dr. Homer Irwin, of the Hibbing General Hospital, spoke at a recent meeting of area representatives on the organization of a blood bank. The campaign to establish a blood bank is sponsored by the Rotary Club of Hibbing; the bank would serve residents of Buhl, Chisholm, Hibbing, Keewatin, Nashwauk, Pengilly, Side Lake and surrounding area.

* * *

Dr. Edward L. Strem, Saint Paul pediatrician, was a special guest of the Saint Paul Chapter of B'nai B'rith Women at a dessert luncheon, held at the Jewish Community Center, January 7.

* * *

Dr. E. G. Hubin, of Sandstone, recently completed a new office building and moved in, January 1.

* * *

Dr. Albert J. Chesley, executive officer of the Minnesota State Board of Health, was recently awarded an outstanding achievement medal by the University of Minnesota, and a distinguished service medal by the Minnesota State Medical Association, for his contributions to the field of health. Dr. Chesley has been executive officer of the state board of health for nearly thirty-one years and has the longest service in the department—nearly fifty-one years.

* * *

Dr. W. D. Brodie of Saint Paul, was recently named chief of staff of St. Luke's Hospital at the recent annual meeting. **Dr. D. L. Martin** was named chief of staff-elect and **Dr. John V. Farkas,** secretary of the staff.

Other officers elected include **Dr. Victor P. Hauser,** chief of surgery; **Dr. E. J. Black,** chief of medicine; **Dr. J. S. McCabe,** chief of obstetrics-gynecology, and **Dr. J. W. Edwards,** chief of general practice.

* * *

Dr. D. R. Philp, associated with **Dr. L. J. Hoyer** in the Windom Clinic for the past two years, has been recalled to active duty with the navy medical corps. Dr. Philp will report to Camp Pendleton for indoctrination, February 25.

* * *

Dr. Samuel F. Haines, previously vice chairman of the board of governors of the Mayo Clinic, was elected chairman at the January 5 meeting. He succeeds **Dr. Arlie R. Barnes,** who resigned because of illness. Succeeding Dr. Haines as vice chairman of the board is **Dr. J. T. Priestly.**

* * *

Seven appointments to the staff of the Mayo Clinic became effective in January. The new consultants are as follows:

Dr. Franklin H. Ellis, Jr., A.B., Yale University, 1941, M.D., Columbia University College of Physicians and Surgeons, 1944, and Ph.D. in surgery from

I'm building up a cash reserve with a savings account in the American National Bank where I'm guaranteed 2% interest on the *entire amount I have on deposit* in my savings account.

©

THE AMERICAN NATIONAL BANK
OF SAINT PAUL

Bremer Arcade Robert at 7th CE 6666

Member Federal Deposit Insurance Corporation

RELIABILITY!

For years we have maintained the highest standards of quality, expert workmanship and exacting conformity to professional specifications . . . a service appreciated by physicians and their patients.

ARTIFICIAL LIMBS, TRUSSES,
ORTHOPEDIC APPLIANCES,
SUPPORTERS, ELASTIC HOSIERY

Prompt, painstaking service

Buchstein-Medcalf Co.
223 So. 6th St. Minneapolis 2, Minn.

PATTERSON SURGICAL SUPPLY COMPANY
103 East Fifth St., St. Paul 1, Minn.
HOSPITAL AND PHYSICIANS SUPPLIES AND EQUIPMENT
Cedar 1781-82-83

the University of Minnesota in June, 1951. Dr. Ellis has been an assistant to the staff in surgery since January, 1952.

Dr. Ray W. Gifford, Jr., B.S., Otterbein College, Ohio, 1944; M.D., Ohio State University College of Medicine, 1947, and M.S. in medicine from the University of Minnesota in June, 1952. Dr. Gifford has been an assistant to the staff in medicine since July 1952.

Dr. Lowell L. Henderson, A.B., Indiana University, 1937; M.D., Indiana University Medical Center, 1941, and M.S. in medicine from the University of Minnesota in June, 1948. Dr. Henderson has been associated with the Carle Hospital Clinic at Urbana, Illinois, since 1948.

Dr. Thomas P. Kearns, A.B., University of Louisville, 1943; M.D., University of Louisville School of Medicine, 1946, and M.S. in ophthalmology from the University of Minnesota in August, 1952. Dr. Kearns has been an assistant to the staff in ophthalmology since April 1952.

Dr. William H. ReMine, B.S., University of Richmond, 1940; M.D., Medical College of Virginia, 1943, and M.S. in surgery from the University of Minnesota in December, 1952. Dr. ReMine has been an assistant to the staff in surgery since October, 1950.

Dr. Paul W. Scanlon, B.A., Syracuse University, 1943; M.D., Syracuse University College of Medicine, 1946, and M.S. in radiology from the University of Minnesota in December 1952. Dr. Scanlon has been an assistant to the staff in therapeutic radiology since January, 1952.

Dr. John H. Thompson, Jr., A.B., Heidelberg College, Tiffin, Ohio, 1943; M.S., Ohio State University Graduate School, 1948, and Ph.D. in parasitology from the University of Minnesota in December, 1952.

* * *

Dr. Wilder Graves Penfield, director of the Montreal Neurological Institute and internationally known as an outstanding brain surgeon, was the only Canadian to be awarded the Order of Merit given outstanding citizens of the British Commonwealth and the world on New Year's day. Recipients in the past have been Winston Churchill, John Masefield, and General Eisenhower. The order entitles them to place the initials "O.M." after their names.

The award is of special interest to our locality in that Dr. Penfield is a native of Hudson, Wisconsin. He spent much of his youth in Hudson and his wife is also a native of that city.

* * *

Dr. Erick Y. Hakanson has become associated with **Dr. Norbert J. Lilleberg** and **Dr. P. Theodore Watson**, 861 Lowry Medical Arts Building in Saint Paul. His practice will be limited to obstetrics, gynecology and infertility.

* * *

Dr. Irvine McQuarrie, professor and head of the Department of Pediatrics at the University of Minnesota, Minneapolis, will be guest-participant in panel discussions at the First Western Hemisphere Conference of the World Medical Association at Richmond, Va., on April 24, 1953.

The sessions will provide opportunity for a discussion of current medical problems between representatives of the national medical societies of Latin America and United States specialists and practitioners. Dr. Louis H. Bauer, president of the American Medical Association and secretary-general of the World Medical Association, will moderate at a general session at which panel reports will be made.

Dr. McQuarrie will contribute a chapter on major advances in the field of pediatrics to a volume com-

RADIUM & RADIUM D+E
(Including Radium Applicators)
FOR ALL MEDICAL PURPOSES
Est. 1919
Quincy X-Ray and Radium Laboratories
(Owned and Directed by a Physician-Radiologist)
Harold Swanberg, B.S., M.D., Director
W.C.U. Bldg. Quincy, Illinois

PHYSICIANS AND HOSPITALS SUPPLY CO., Inc.
1400 HARMON PLACE, MINNEAPOLIS, MINN.
INSTRUMENTS · TRUSSES · EQUIPMENT · PHARMACEUTICALS · DRUGS
MAIN 2494

Insurance at a Saving
Druggists' Mutual Insurance Company
OF IOWA, ALGONA, IOWA
Prompt Loss Service
Fire - Tornado - Automobile Insurance
MINNESOTA REPRESENTATIVE—S. E. STRUBLE, WYOMING, MINN.

memorating the conference. He is a diplomate of the American Board of Pediatrics and a member of the American Academy of Pediatrics and the American Society for Clinical Investigation. At the present time he is president of the American Pediatric Society. Dr. McQuarrie, a graduate of the Johns Hopkins University School of Medicine, has been visiting professor under the auspices of the Rockefeller Foundation, in both China and Japan.

* * *

The Minnesota Society for Mentally Retarded, of which Mr. Walker Groetzinger is president, is a member of the National Association for Retarded Children which was founded in 1950 and now has 129 units in thirty-three states and the District of Columbia. The National Association recently named Dr. Grover F. Powers, Professor Emeritus in Pediatrics, Yale University, chairman of a twenty-five member national board composed of eminent scientists in the country to direct research on mental retardation. Dr. Powers, an internationally recognized child specialist, teacher and researcher is a consultant of the American Academy of Pediatricians, of which he is a Fellow.

* * *

BLUE CROSS-BLUE SHIELD

By the beginning of 1953, in slightly more than five years of its existence, Minnesota Blue Shield has enrolled over 560,000 subscribers or approximately one-fifth of the entire population of the state. During this same period it has paid over $10 million to the medical profession for the subscribers' medical benefits. It now has almost 2800 participating physicians in Minnesota, and it processes practically 10,000 claims a month. During its brief span of life it has increased its benefits to subscribers on four separate occasions and has raised its rates only once and that a minimum amount for only two types of contract holders. This briefly establishes the salient features of Blue Shield's progress in Minnesota to date.

As the number of its subscribers passed the half million level, Minnesota's plan has now become the eleventh largest Blue Shield Plan in the country. Despite this, its present enrollment is only slightly more than one-half that of its companion organization, Minnesota Blue Cross, which indicates that the saturation point is not close at hand and that Minnesota Blue Shield is still a lusty, growing organization. In other words, the present enrollment in Blue Shield is not the end but merely the start of prepaid medical coverage, and every effort is to be put forth to extend to as many residents of the state as is possible the benefits which are provided by the Blue Shield plan.

Steadily increasing payments of claims or benefits are not only the result of the growing number of subscribers, but are also related to the increases in benefits or fees which recently went into effect. It is noteworthy that the number of claims processed per month has more than doubled since August, 1950, and through that same period the amount of money paid for medical benefits each month has almost doubled. With increases of fees or benefits for almost 100 of the total 1000 items of the Schedule of Payments having been made effective several months ago, it is to be expected that the amount of money paid to doctors as medical benefits will increase even more rapidly than before.

Another facet of Blue Shield's development which merits consideration is its slow yet steady increase of participating physicians. In spite of the fact that during the past two years over 100 of Minnesota's participating physicians have entered the military service there are now about fifty more participating physicians than two years ago. In fact, with 2800 Minnesota doctors having signed the participating agreement, it can be said that, with the exception of one large group, less than 100 practicing physicians of the state have failed to affiliate themselves with the Minnesota Blue Shield program.

With these developments, it is evident that Blue Shield is playing a prominent role in the general scheme of medical care in Minnesota. An ever-expanding segment of the state's population obtains a greater portion of its medical care bill through Blue Shield. Continuing and even more energetic or at least more articulate support and promotion of the Blue Shield program by the doctors of the state should lead to more and better care for the people and greater prosperity for those who provide the care.

Blue Shield payment for surgical-medical care of Minnesota Medical Service incorporated participant subscribers:

For 12 months of 1951	$3,095,213.00
For 11 months of 1952	$3,337,875.00

Blue Cross payment for hospital care of Minnesota Hospital Service Association participant subscribers:

For 12 months of 1951	$11,312,390.00
For 11 months of 1952	$11,370,458.00

CROLEUM SUSPENSOID
Topical Applicant Vehicle

. . . non-drying colloidal emulsion . . . flows readily . . . frequently used as a base for topical prescription of Sulfur, Calomel, Copper Sulfate and many others . . . facilitates penetration of medicaments . . . an excellent non-irritating dermal emolient used without adding medication.

SAMPLES ON REQUEST

Chester-Kent, Inc.
100 S. WABASHA, ST. PAUL 1, MINN.

Give!
1953 RED CROSS FUND

BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical Libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

BOOKS RECEIVED FOR REVIEW

SECOND ANNUAL REPORT ON STRESS. Hans Selye, M.D., Ph.D. (Prague), D.Sc. (McGill), F.R.S. (Canada). Professor and Director of Institut de Médecine et de Chirurgie expérimentales, Université de Montréal; and Alexander Horava, M.D. (Lausanne), Research Associate and Librarian of the Institut de Médecine et de Chirurgie expérimentales, Univērsit de Montréal. 526 pages. Illus. Price $10.00, cloth. Montreal: Acta, Inc., 1953.

ENDOCRINE TREATMENT IN GENERAL PRACTICE. Edited by Max A. Goldzieher, M.D., and Joseph W. Goldzieher, M.D. 474 pages. Illus. Price $8.00, cloth. New York: Springer Publishing Co., 1953.

CLINICAL OBSTETRICS. Edited by Clifford B. Lull, M.D., Late Director, Division of Obstetrics and Gynecology, Pennsylvania Hospital; and Robert A. Kimbrough, M.D., Director of the Division of Obstetrics and Gynecology, Pennslvania Hospital, Professor of Gynecology and Obstetrics, Graduate School of Medicine, University of Pennsylvania, Gynecologist to the Graduate Hospital. 732 pages. Illus. Price $10.00, cloth. Philadelphia: J. B. Lippincott Co., 1953.

THE LITERATURE ON STREPTOMYCIN, 1944-1952. Compiled by Selman A. Waksman. 2nd ed. 553 pages. Price $5.00. New Brunswick, N. J.: Rutgers University Press, 1952.

Who could be more competent to compile a bibliography on streptomycin than Selman A. Waksman, who has just recently been awarded the Nobel Prize in medicine and physiology for "his discovery of streptomycin, the first effective antibiotic against tuberculosis?"

The first edition of this bibliography appeared in 1948 when the references on streptomycin numbered nearly 1,200. Now there are nearly 6,000 on this subject. To keep this bibliography up to date, the present plan is to publish annual supplements to this volume.

Dr. Waksman explains in the preface the scope of this comprehensive bibliography and the policy of inclusion or rejection of references which guided him.

The references are arranged in as nearly chronological order as possible. Articles which were important forerunners to the discovery of streptomycin are listed first. They are numbered in Roman numerals. The rest are numbered in Arabic numerals. Number 1 is given to the first paper in which the isolation of streptomycin was announced in 1944.

There are two excellent indices to the bibliography. One is the complete author index; the other is a subject index, which is quite detailed.

M.M.P.

Belleson's

MEDICAL EMPLOYMENT SERVICE

In the specialized field of all medical, dental and hospital personnel. Operated by a registered technician with medical personnel experience.

All interviews strictly confidential.

For Prompt, Efficient Service
Call or Write

1250 Baker Building
Minneapolis 2, Minnesota
Telephone: FIllmore 4063

Distributors to the profession

of fine

Injectable Vitamins and Endocrines

Interstate Pharmacal Company

P.O. Box 252 Beloit, Wis.

MAIL ORDERS SHIPPED IMMEDIATELY

Ulmer
PHARMACAL COMPANY
1400 Harmon Place
Minneapolis 3, Minnesota

Manufacturers of
Ethical Pharmaceutical Specialties
not advertised to the laity

DANIELSON MEDICAL ARTS PHARMACY, INC.

10-14 Arcade, Medical Arts Building
825 Nicollet Avenue—Two Entrances—78 South Ninth Street
MINNEAPOLIS

PHONES:
ATLANTIC 3317
ATLANTIC 3318

HOURS:
WEEK DAYS—8 to 7
SUN. AND HOL.—10 TO 1

Classified Advertising

Replies to advertisements with key numbers should be mailed in care of MINNESOTA MEDICINE, *2642 University Avenue, Saint Paul 14, Minn.*

FOR RENT—Attractive doctor's suite in south Minneapolis. Wonderful location for a practice to be built up, or as an outlying office for a downtown doctor. Write Wm. L. Cochrane, 7301 Fremont Avenue South, Minneapolis 19, Minnesota. Telephone RO 9-8758.

WILL LEASE fully equipped hospital in Northern Minnesota resort area. Owner being called into Armed Services. Partnership terms at later date. Contact Walker Hospital, Walker, Minnesota.

WANTED—M.D. to join two established doctors in practice of general medicine and surgery. New ground-floor offices, suburban area. Partnership in near future. Address E-353, care of MINNESOTA MEDICINE.

EXCELLENT OPENING for a physician who wishes to establish a clinic in a district comprised of small towns. Address Al. Kobielush, Westboro, Wisconsin.

PLACEMENT SERVICE

The Minnesota State Medical Association maintains a Medical Placement Service for the benefit of physicians who are looking for locations and positions; also for communities, medical groups and physicians who are looking for licensed medical assistance. For information, write to the Minnesota State Medical Association, 496 Lowry Medical Arts Bldg., Saint Paul 2, Minnesota.

WANTED—General practitioner for small southern Minnesota town. No competition. Equipment to fill five rooms for sale. Very reasonable. Local bank will finance. Lucrative practice can be built up. Address E-347, care MINNESOTA MEDICINE.

WANTED: Physician interested in general practice, internal, and industrial medicine to join five-man clinic. Salary and future member of partnership offer excellent opportunity. Address E-345, care MINNESOTA MEDICINE.

WANTED—Unmarried physician, under 28. On a one-year trial, general practice, then possible partnership. Address E-350, care MINNESOTA MEDICINE.

FOR SALE—Professional office ultra-violet light (Burdick), excellent condition, quartz tubes. Address E-352, care MINNESOTA MEDICINE.

LOCUM TENENS WANTED—July to October, any location. Good salary expected. Minnesota graduate, licensed. Married, family. Starting surgery fellowship, Mayo Clinic, in October. Address E-351, care MINNESOTA MEDICINE.

FOR RENT—Doctor's office in building on northeast corner University Avenue and Dale Street, Saint Paul. Busy intersection. Inquire 490 North Dale Street, Saint Paul, Minnesota.

Index to Advertisers

Abbott Laboratories ... 110
Aloe, A. S., Co. ... 178
American Meat Institute ... 112
American Medical Association ... 179
American National Bank ... 194
Ames Co., Inc. ... 106
Anderson, C. F., Co. ... 184
Ayerst, McKenna & Harrison, Ltd. ... 108

Baker Laboratories, Inc. ... 116
Belleson's Medical Employment Service ... 197
Benson Optical Co. ... 193
Bilhuber-Knoll Corporation ... 185
Birches Sanitarium, Inc. ... 190
Brown & Day, Inc. ... 188
Buchstein-Medcalf Co. ... 194

Camel Cigarettes ... 123
Caswell-Ross Agency ... 102, 103
Chester-Kent, Inc. ... 196
Classified Advertising ... 198
Coca-Cola Co. ... 181
Cook County Graduate School of Medicine ... 182
Cordelia of Hollywood ... 111
Crestview Hospital ... 185

Dahl, Joseph E., Co. ... 180
Danielson Medical Arts Pharmacy, Inc. ... 197
Druggists Mutual Insurance Co. ... 195

Ewald Bros. ... Inside Back Cover

Fuller Pharmaceutical Co. ... 118

General Electric Co. ... 120
General Pharmacal Corporation ... 115
Glenwood Hills Hospitals ... 199

Hall, Anderson & Nordehn ... 181
Hazelden Foundation ... 189
Homewood Hospital ... 192

Interstate Pharmacal Co. ... 197

Juran & Moody ... 187

Lederle Laboratories ... Facing Page 112
Lilly, Eli, & Co. ... Front Cover, 124

Mead Johnson & Co. ... 200
Medical Protective Co. ... 182
Merck & Co., Inc. ... 119
Milwaukee Sanitarium ... Back Cover
Mounds Park Hospital ... Back Cover
Murphy Laboratories ... 193

North Shore Health Resort ... 183

Orgo Products Co. ... 180

Parke, Davis & Co. ... Inside Front Cover, 97
Patterson Surgical Supply Co. ... 194
Pfizer, Chas., & Co. ... 105
Physicians Casualty Association ... 191
Physicians & Hospitals Supply Co. ... 98, 195
Professional Credit Protective Bureau ... 101

Quincy X-Ray & Radium Laboratories ... 195
Q-Test Distributors of Minneapolis ... 115

Radium Rental Service ... 180

St. Croixdale Sanitarium ... 100
Schering Corporation ... 109
Searle, G. D., & Co. ... 177
Smith-Dorsey ... 104
Squibb ... 117

Ulmer Pharmacal Co. ... 197
Upjohn ... 121
U. S. Vitamin Corporation ... 114

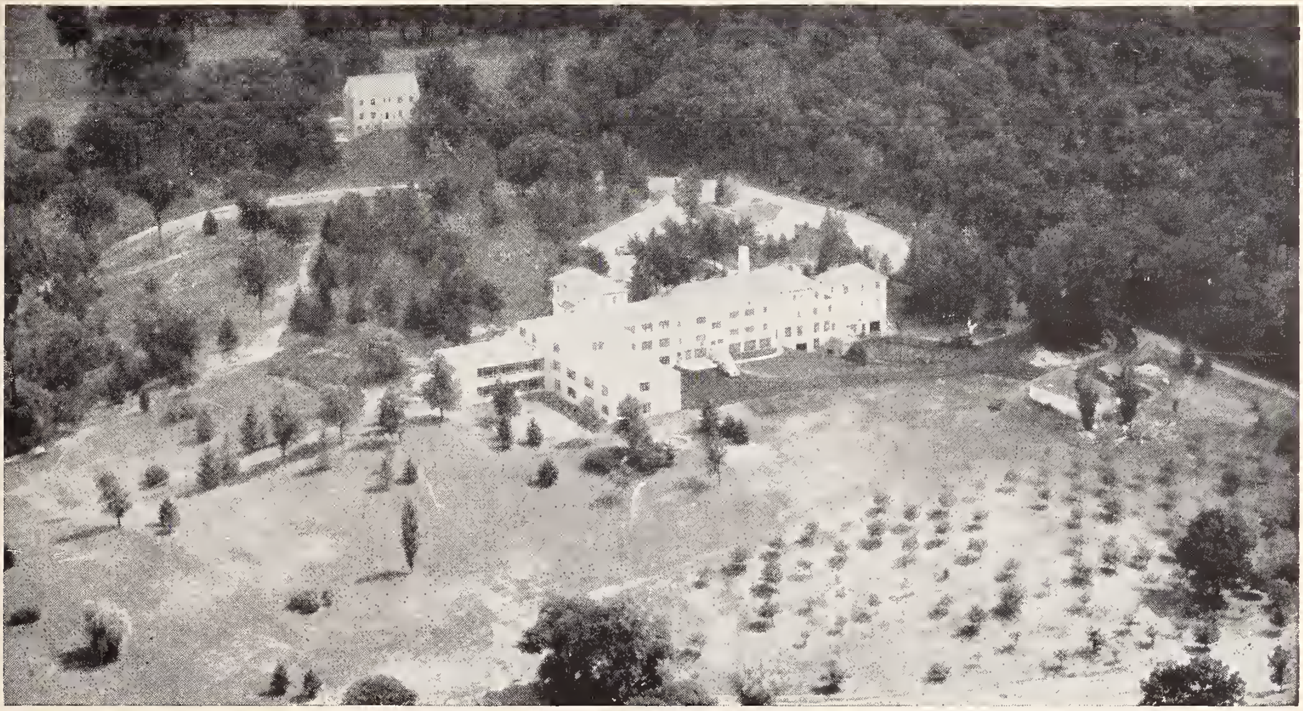
Wander Co. ... 113
Winthrop-Stearns, Inc. ... 107
Wyeth ... 122

Glenwood Hills Neuro-Psychiatric **Hospital**

3901 Golden Valley Road **Minneapolis 22, Minnesota** **JUniper 2771**

Voluntary *Non-Profit* *Non-Sectarian*

140 acres of rolling, wooded and lake land—seven minutes from downtown Minneapolis



Electroencephalography

Rehabilitation Center **Therapies** **Laboratory**

Write for additional information

— ALSO —

Glenwood Hills School of Neuro-Psychiatric **Nursing**

Where attitudes and nursing skills are combined to give the maximum in patient care

One Year Course *Tuition Free* *Room and Board Free*

For information regarding the Nursing School—please write
Helen Swenson Rascop, R.N., Director of Nurses, Glenwood Hills Hospital

Dextri-Maltose
MEAD
No 1

For routine infant feeding. The basic Dextri-Maltose product.

Dextri-Maltose

MEAD

MEAD JOHNSON & COMPANY
Evansville 21, Ind., U.S.A.

Dextri-Maltose
MEAD
No 2

Especially indicated for premature infants. Contains 50 mg. ascorbic acid per ounce.

Dextri-Maltose
MEAD
No 3

To aid in counteracting constipation. Contains 3% potassium bicarbonate.

designed with singleness of purpose

Designed and manufactured specifically for infant formulas,
Dextri-Maltose® has an unequaled background of successful clinical use.
Safety for your infant patients is assured by the dry form of
this carbohydrate, meticulous laboratory control at all stages in its
manufacture, and hermetically sealed, key-opening cans.
Dextri-Maltose is palatable but not sweet; does not
create a "sweet tooth" in infants.
Easily measured without spilling or waste and almost instantly
soluble, Dextri-Maltose is convenient for the mother.

Chloromycetin®

in the pneumonias

Chloromycetin is rapid in producing defervescence and recovery, according to recent comparative studies.

exceptionally well tolerated, CHLOROMYCETIN is noted for the infrequent occurrence of even mild gastrointestinal and other side effects.

Serious blood disorders following its use are rare. However, it is a potent therapeutic agent, and should not be used indiscriminately or for minor infections — and, as with certain other drugs, adequate blood studies should be made when the patient requires prolonged or intermittent therapy.

Chloromycetin (chloramphenicol, Parke-Davis) is available in a variety of forms, including: Chloromycetin Kapseals,® 250 mg., bottles of 16 and 100. Chloromycetin Capsules, 100 mg., bottles of 25 and 100. Chloromycetin Capsules, 50 mg., bottles of 25 and 100. Chloromycetin Ophthalmic Ointment, 1%, ⅛-ounce collapsible tubes. Chloromycetin Ophthalmic, 25 mg. dry powder for solution, individual vials with droppers.

MEDICAMENTA VERA
PD & CO.

Parke, Davis & Company
DETROIT, MICHIGAN

The Balance Sheet

We are all striving mightily to set aside some portion of our income in reserve. This is not an easy task in this day of heavy taxation. Yet these reserves are important; to be used for contingencies that we cannot predict today. It's silly to be forced to stand idly aside and watch those reserves being dissipated through protracted periods of disability when you could have prevented it by the purchase of an outstanding Disability Policy.

It's only logic that indicates that your best plan of income protection is through the plan available to you through your Association.

Tomorrow may be too late—ACT NOW.

CASWELL-ROSS AGENCY

1177 N. W. Bank Building
Minneapolis 2, Minnesota
Minneapolis—MA 2585
St. Paul—ZE 2341

Insurors to:

Minnesota State Bar Association
Minnesota State Dental Association
Minnesota State Medical Association
Minnesota Society of C. P. A.
Minnesota State Pharmaceutical Assn.
Minnesota Auto Dealers Association
Minnesota Federation of Eng. Societies
Minnesota State Veterinary Medical Soc.
Hennepin County Medical Society
Hennepin County Bar Association
11th Judicial Bar Association
Minneapolis Association of Life Underwriters
Ramsey County Medical Society
Ramsey County Bar Association
St. Paul District Dental Soc.
Minneapolis District Dental Soc.
St. Cloud Dental and Stearns County Medical Society
Duluth District Dental Society
East Central Medical Society
St. Louis County Medical Society
West Central Dist. Dental Society
Northwest Proprietors Association
St. Paul Life Underwriters, Inc.

Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 36 **March, 1953** **Number 3**

Contents

An Approach Toward the Ideal in Parenteral Nutrition.
J. H. Strickler, M.D., and *Carl O. Rice, M.D.,* Minneapolis, Minnesota 221

The Diagnosis and Management of Peripheral Arterial Embolism.
John L. Keeley, M.D., Chicago, Illinois........ 230

A Histoplasmin and Tuberculin Study of Psychiatric Patients Having Abnormal Chest Roentgenograms.
Millard A. Troxell, M.D., Saint Paul, Minnesota.. 235

Neurosyphilis.
Robert R. Kierland, M.D., Rochester, Minnesota 240

Public Health Service in Minnesota.
Charles G. Sheppard, M.D., Hutchinson, Minnesota 244

Management of Patients with Trauma of the Chest.
Nathan K. Jensen, M.D., Minneapolis, Minnesota 247

Chronic Pharyngeal and Laryngeal Histoplasmosis Successfully Treated with Ethyl Vanillate.
Horace H. Zinneman, M.D., and *Wendell H. Hall, M.D.,* Minneapolis, Minnesota............ 249

Premature Survival.
S. S. Scherling, M.D., Minneapolis, Minnesota... 253

Laboratory Aids to Medical Pbactice:
Clinical Determination of Hemoglobin.
Frank D. Mann, M.D., Rochester, Minnesota.. 255

President's Letter:
Viewing for Health............................ 257

Editorial:
The State Association Centennial................. 258
St. Joseph's Hospital Centennial................. 258
President's Commission on Health Needs of the Nation 259

Medical Economics:
AMA Criticizes Commission Report............. 260
Ewing Trip Called Oscar's "Deep Bow"........ 261
'54 Health-Welfare Budget Issued............. 261

Reports and Announcements.................. 264

Woman's Auxiliary 269

In Memoriam 271

Of General Interest........................... 274

Book Reviews 283

Contents of Minnesota Medicine copyrighted by Minnesota State Medical Association, 1953

Entered at the Post Office in Saint Paul as second class mail matter. Accepted for mailing at the special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 13, 1918.

MINNESOTA MEDICINE

OFFICIAL JOURNAL OF THE MINNESOTA STATE MEDICAL ASSOCIATION

Published by the Association under the direction of its Editing and Publishing Committee

Office of Minnesota State Medical Association,
496 Lowry Medical Arts Bldg., Saint Paul 2, Minnesota.

EDITING AND PUBLISHING COMMITTEE

E. M. HAMMES, Saint Paul
PHILIP F. DONOHUE, Saint Paul
L. M. EATON, Rochester
J. J. HEIMARK, Fairmont
C. L. OPPEGAARD, Crookston
T. A. PEPPARD, Minneapolis
H. A. ROUST, Montevideo
O. W. ROWE, Duluth
HENRY L. ULRICH, Minneapolis
A. H. WELLS, Duluth

EDITORIAL STAFF

CARL B. DRAKE, Saint Paul, Editor
GEORGE EARL, Saint Paul, Associate Editor
HENRY L. ULRICH, Minneapolis, Associate Editor

BUSINESS MANAGER

J. R. BRUCE

Annual Subscription—$3.00. Single Copies—$0.40. Foreign and Canadian Subscriptions—$3.50.

The right is reserved to reject material submitted for editorial or advertising columns. The Editing and Publishing Committee does not hold itself responsible for views expressed either in editorials or other articles when signed by the author.

Classified advertising—ten cents a word; minimum charge, $2.00; key number, 25c additional. Remittance should accompany order.

Display advertising rates on request.

Address all communications concerning the journal to Minnesota Medicine, 2642 University Avenue, Saint Paul 14, Minnesota. Telephone Nestor 2641.

A MODERN PRIVATE SANITARIUM

for the Diagnosis, Care and Treatment of Nervous and Mental Disorders

MAIN BUILDING—One of 8 Units in "Cottage Plan"

ST. CROIXDALE ON LAKE ST. CROIX

PRESCOTT, WISCONSIN

Located on beautiful Lake St. Croix, 18 miles from the Twin Cities, it has the advantages of both City and Country. Every facility for treatment provided, including recreational activities and occupational-therapy under trained personnel. Close personal supervision given patients, and modern methods of therapy employed. Inspection and cooperation by reputable physicians invited. Rates very reasonable. Illustrated folder on request.

Prescott Office
Prescott, Wisconsin
Howard J. Laney, M.D.
Tel. 39 and Res., 76

Consulting Neuro-Psychiatrists
Hewitt B. Hannah, M.D., Andrew J. Leemhuis, M.D.
511 Medical Arts Bldg., Tel. MAin 1357, Minneapolis, Minn.

Superintendent
Ella M. Leseman
Prescott, Wisconsin
Tel. 69

tHis is A Miserable Look'ing həad

HERE
LIES
PRINTER
JONES

If it's the printer's fault he ought to be shot.

But looking at it from another angle perhaps it points to a moral.

Maybe it is like a lot of businesses where all the stress is on selling . . . and the collection of accounts, so necessary for sound progress, takes a back seat.

Are your affairs run along these lines . . . with volume the goal and collections secondary? If it is then you need to change your policy.

TO CHANGE YOUR POLICY USE THE PROFESSIONAL CREDIT PROTECTIVE BUREAU

The Professional Credit Protective Bureau is collecting hundreds of past due accounts for dental and medical men.

The Professional Credit Protective Bureau is one collection organization that sees that the patient pays direct to the supplier of medical services. In other words you PAY THE COLLECTION ORGANIZATION AFTER YOUR PATIENT HAS PAID YOU and neither you nor the debtor is embarrassed.

More than 50 leading trade associations . . . including many medical and dental organizations . . . are using this service as part of their service to members.

It will pay you to investigate this tried and true system. Use the attached coupon.

Professional Credit Protective Bureau
724 Metropolitan Bldg., Dept. MM 3-53
Minneapolis 1, Minn.
Please send me full details on the operation of your collection service.

Name ....

Address ....

City .... State ....

Division of
The I.C. System
724 Metropolitan Bldg.
Minneapolis 1, Minn.

NEW

FLAVORED

CHILDREN'S SIZE

BAYER

ASPIRIN

SWALLOWED WHOLE

CHEWED—
OR IN FOOD
OR LIQUID

DISSOLVED
ON TONGUE

- The Best Tasting Aspirin You Can Prescribe.
- The Flavor Remains Stable Down to the Last Tablet in the Bottle.
- 24 Tablet Bottle . . . 2½ gr. each 15¢

2½ gr. ⇨ 1¼ gr.

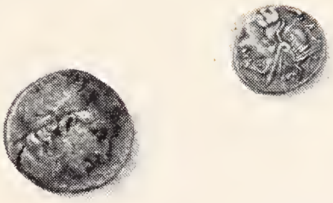
Grooved Tablets — Easily Halved.

We will be pleased to send samples on request

THE BAYER COMPANY DIVISION of Sterling Drug Inc., 1450 Broadway, New York 18, N. Y

Number 3 of a series on the human meaning of great discoveries.

SMALL CHANGE



To achieve change is man's historic mission. To count change is an ordinary matter. But the coins which we give or receive a dozen times a day represent one of history's great inventions. Before money was invented, merchants had to carry bars of metal or sacks of grain, with scales and weights. The first coins minted in Asia Minor in the seventh century B.C. were too valuable for ordinary transactions. The epoch making social transformation came in Greece with the invention of small change. Then the farmer could buy an iron pot or sell a dozen eggs. The laborer could spend his wages in the marketplace. When we count our change, it may not be amiss to count our blessings. These modest tokens facilitate the large-scale interchange of goods and services on which our civilization is built. The penny tends to vanish. The dime becomes thinner. But the value of man's inventive genius is beyond calculation and beyond price, performing new miracles to meet new needs.

General Pharmacal Corporation, Los Angeles, California

General Pharmacal Corporation is the creator of Q-Test, the one-hour office screening test for pregnancy. Sold only to physicians through ethical channels.

EARLY COINS FROM THE COLLECTION OF THE NUMISMATIC GALLERY, BEVERLY HILLS

Exclusive Distributors: Q-Test Distributors of Minneapolis, 5921 Dupont Avenue South

Meat...

and the Weight Reduction Diet in Cardiac Disease

The important relationship between obesity and the outlook in cardiac disease and hypertension is vividly emphasized in a recent publication of The American Heart Association.*

For reasons not entirely understood at present, "heart disease and high blood pressure are more common in overweight persons than in those of desirable weight." The predisposition to atherosclerosis in obesity and the increased physical burden of carrying excess weight are undoubtedly contributing factors. Hence, as this publication points out, weight reduction is the first line of defense in decreasing the incidence of cardiac disease, and in improving the prognosis after cardiac disease or hypertension has developed.

Meat occupies a prominent position in the weight reduction diets outlined in this American Heart Association booklet. This recommendation is in sharp contrast to the erroneous belief held in former years that meat is harmful in hypertension or cardiac disease. "There is no evidence that red meat or any other form of protein in moderation has any adverse influence on blood pressure."

The magic formula for reducing is simply "Eat less." Two types of diets are outlined. One "allows moderate amounts of meat and other proteins, small amounts of fat and moderate amounts of carbohydrates." The other is "high in protein with plenty of meat, eggs and cheese, moderate in fat and low in carbohydrates." Diet No. 1 provides 70 Gm. of protein, 60 Gm. of fat, and 120 Gm. of carbohydrate; caloric yield, 1,300. Diet No. 2 provides 100 Gm. of protein, 80 Gm. of fat, and 60 Gm. of carbohydrate; caloric yield, 1,360.

The inclusion of generous amounts of meat in these diets—12 to 16 ounces of cooked meat or two substantial servings each day in Diet No. 2—is a reflection of the important role meat plays in any weight reduction regimen. It is generously included because of its high content of protein of excellent biologic value and because lean meat contains unobjectionably small amounts of fat.

---

*Food For Your Heart, a Manual for Patient and Physician, Department of Nutrition, Harvard School of Public Health, Harvard University, The American Heart Association, Inc., New York, 1952. Copies available through local Heart Association.

The Seal of Acceptance denotes that the nutritional statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

American Meat Institute
Main Office, Chicago . . . Members Throughout the United States

Truly

broad-spectrum

therapy in

each tasty

teaspoonful

CRYSTALLINE

Terramycin

BRAND OF OXYTETRACYCLINE, AMPHOTERIC

oral suspension

Pure, well-tolerated Terramycin in pleasant raspberry-flavored vehicle. Each 5 cc. teaspoonful supplies 250 mg. of truly broad-spectrum antibiotic effective against gram-positive and gram-negative bacteria, including the important coli-aerogenes group, rickettsiae, certain large viruses and protozoan organisms.

Don't miss
Pfizer
Spectrum
appearing
regularly in
the J.A.M.A.

Pfizer *world's largest producer of antibiotics*

ANTIBIOTIC DIVISION, CHAS. PFIZER & CO., INC., BROOKLYN 6, N. Y.

STILL the Radiant "First-Nighter"

. . . right through the menopause

on oral estrogen therapy that imparts

No Odor
or
After-Odor,

No Taste
or
After-Taste

Convince her that her next ten years will be as happy and active as the past ten, and you'll answer her secret need for reassurance Put her on Sulestrex, and you'll promptly solve the physical symptoms. A marked advance in oral estrogenic therapy, Sulestrex is a pure, stable, water-soluble, crystalline compound, deriving its estrogenic activity from estrone. It is *not* a mixture of estrogens, nor does it contain any inactive steroids or uriniferous ingredients. Reich and associates,[1] in a recent continuing study, observed that Sulestrex "*. . . is a clinically effective oral estrogenic substance, easy to administer and extremely well tolerated . . . with an amazingly low incidence of side reactions.*" Prescribe it with the assurance that you are using as effective estrogen therapy as science has yet created.

Abbott

Sulestrex®
PIPERAZINE
(PIPERAZINE ESTRONE SULFATE, ABBOTT)
Tablets, Sub-U-Tabs® and Elixir
1-131

[1] Reich, W. J., et al. (1952), A Recent Advance in Estrogen Therapy. II. American J. Obst. & Gynec., 64-174, July

Upjohn

long-acting
androgen:

Depo-Testosterone
Trademark Reg. U.S. Pat. Off.
CYCLOPENTYLPROPIONATE

Each cc. contains:

Testosterone Cyclopentylpropionate ....50 mg. or 100 mg.
Chlorobutanol .... 5 mg.
Cottonseed Oil ....q.s.

50 mg. per cc. available in 10 cc. vials

100 mg. per cc. available in 1 cc. and 10 cc. vials

The Upjohn Company, Kalamazoo, Michigan

Depo-Testosterone
Cyclopentylpropionate
Upjohn

"PREMARIN"®

Highly effective • Well tolerated • Imparts a feeling of well-being

"PREMARIN"

Most menopausal patients experience striking relief of symptoms with "Premarin."

"PREMARIN"

Estrogenic Substances (water-soluble)

"PREMARIN"

also known as Conjugated Estrogens (equine)

"PREMARIN"

5202 AYERST, McKENNA & HARRISON Limited • New York, N. Y. • Montreal, Canada

Ayerst

SULFACETAMIDE

SULFADIAZINE

SULFAMERAZINE

the "extra advantage"
in this triple sulfonamide is
sulfacetamide

TRICOMBISUL® (acet-dia-mer-sulfonamides-Schering) provides not only sulfadiazine and sulfamerazine — standard components of almost all triple sulfonamide mixtures — but also sulf*acetamide.*

Sulfacetamide brings to the combination extremely high solubility, high bacteriostatic activity, and greater safety for the urinary tract.

TRICOMBISUL

Schering
TRICOMBISUL
SULFA

Schering CORPORATION • BLOOMFIELD, N. J.

TRICOMBISUL

clinically accepted

for

increased safety
high degree of efficacy
excellent palatability

in triple
sulfonamide therapy

council-accepted

tri-sulfameth

Each 5 cc. (approx. one teaspoonful) of syrup or each tablet provides:

ACCEPTED COUNCIL ON PHARMACY AND CHEMISTRY AMERICAN MEDICAL ASSOCIATION	Sulfamethazine	0.165 Gm.	(2.5 gr.)
	Sulfadiazine	0.165 Gm.	(2.5 gr.)
	Sulfamerazine	0.165 Gm.	(2.5 gr.)
	Sodium Citrate*	0.5 Gm.	(7.7 gr.)

*not contained in Tri-Sulfameth Tablets

"Trials of sulfonamide combinations . . . have indicated that the occurrence of crystalluria can be decreased to negligible proportions." Virginia Medical Monthly 75:56, 1949.

PROFESSIONAL SAMPLES ON REQUEST

cf **casimir funk laboratories, inc.**
affiliate of U. S. Vitamin Corporation
250 East 43rd St., New York 17, N. Y.

What Nature Does for the Oyster . . .

AMPHOJEL® does for the peptic ulcer. Local physical protection by AMPHOJEL'S demulcent gel, plus the effect of its antacid component, hasten healing and relief of pain.

ACCEPTED COUNCIL ON PHARMACY AND CHEMISTRY AMERICAN MEDICAL ASSOCIATION

Wyeth ®
Philadelphia 2, Pa.

AMPHOJEL®—Aluminum Hydroxide Gel (Alumina Gel) Wyeth

P&H

TRUSSES • SUPPORTS • HOSIERY

Large, Complete Stocks—Expert Fitting Facilities

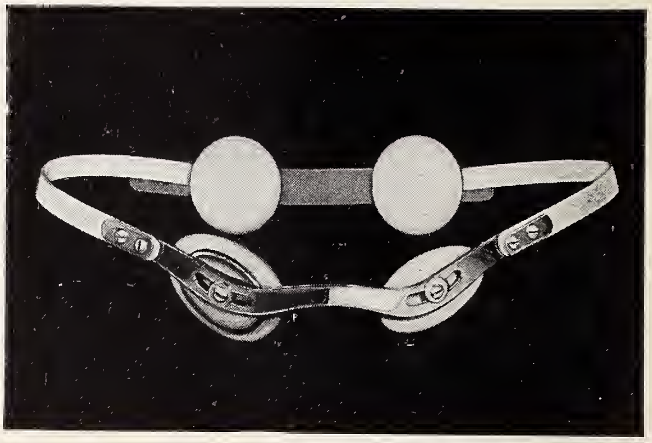
PHYSICIANS & HOSPITALS SUPPLY CO. INC.
PHYSICIANS & HOSPITALS SUPPLY CO. INC.
P&H

Sheer Elastic Hosiery

Supports for All Conditions

Preferred Stock of Trusses

SACRO BELT



For prompt, efficient, and satisfactory service, send your orders for anatomical supports, elastic hosiery, and trusses to P&H, or if you prefer, you can refer your patients to us for expert fitting by our male and female fitters, who are at your service at all times. If you do not already have our latest truss catalog, send for same today. M-353

PHYSICIANS AND HOSPITALS SUPPLY CO., Inc

1400 HARMON PLACE, MINNEAPOLIS 3, MINNESOTA

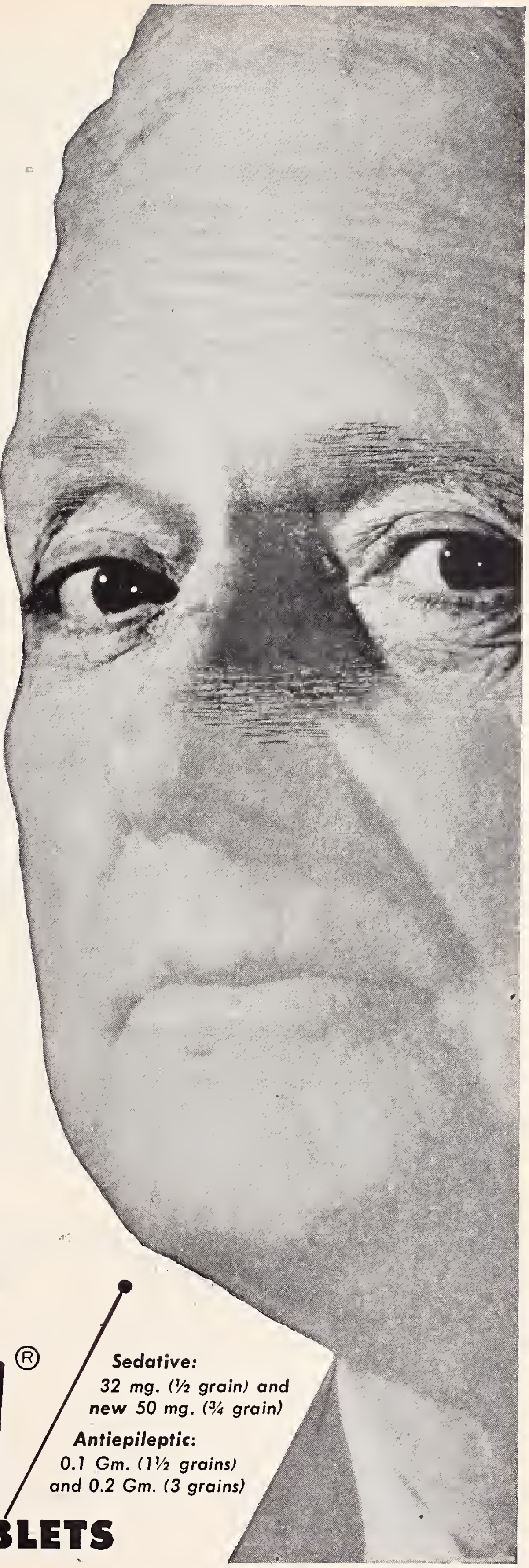
Relaxed but awake

In emotional and nervous disorders, Mebaral exerts its calming influence without excessive hypnotic action.

Mebaral is also a reliable anticonvulsant.

INDICATIONS:

Because of its high degree of sedative effectiveness, Mebaral finds a great field of usefulness in the regulation of agitated, depressed or anxiety states, as well as in convulsive disturbances. Specific disorders in which the calming influence of Mebaral is indicated include neuroses, mild psychoses, nervous symptoms of the menopause, hypertension, hyperthyroidism and epilepsy.



for sedation

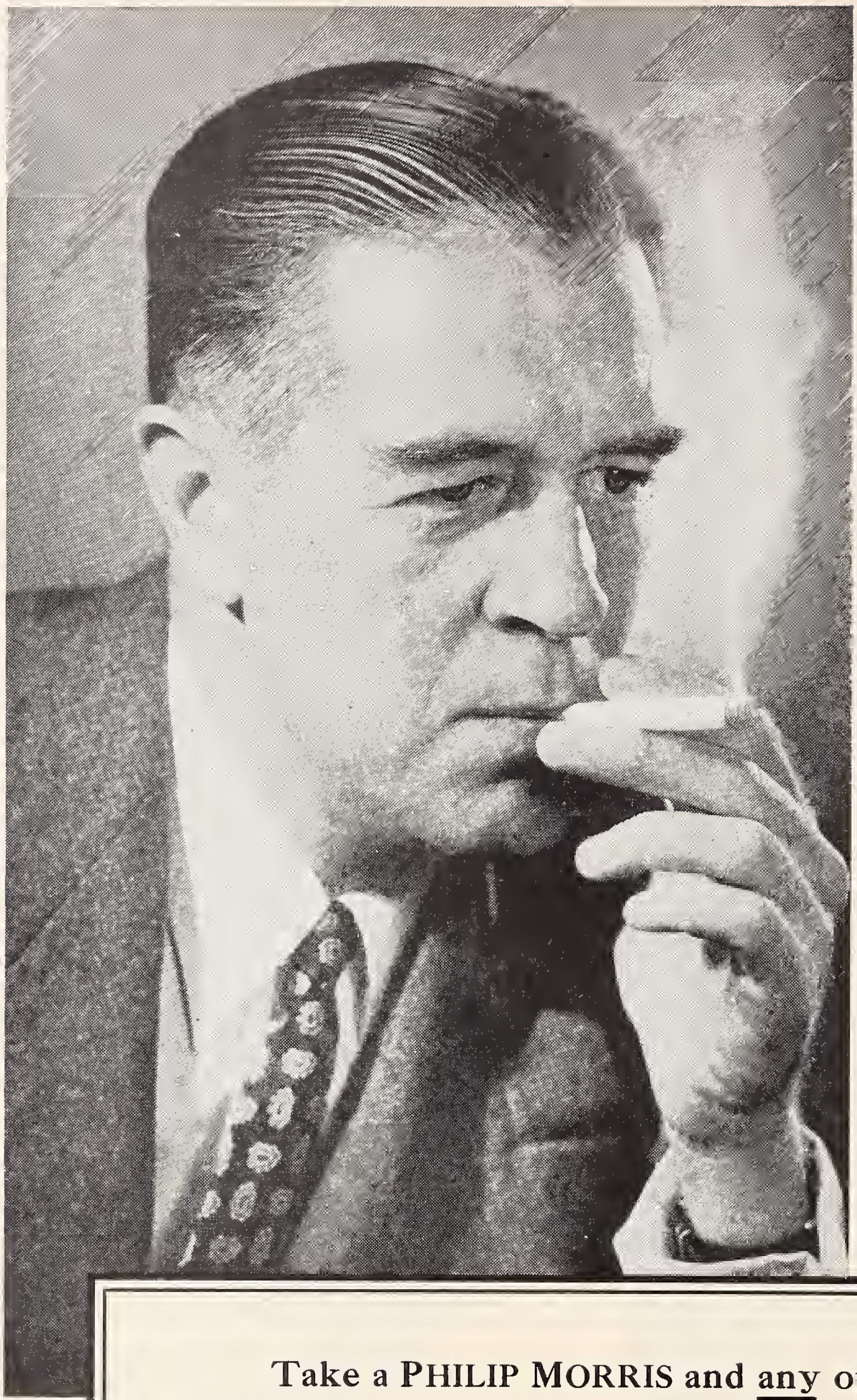
Mebaral®

***Tasteless* TABLETS**

Sedative:
32 mg. (½ grain) and
new 50 mg. (¾ grain)
Antiepileptic:
0.1 Gm. (1½ grains)
and 0.2 Gm. (3 grains)

WINTHROP-STEARNS INC. New York 18, N.Y., Windsor, Ont.

Mebaral, trademark reg. U. S. & Canada, brand of mephobarbital



Doctor,
be your own
judge...
try this
simple test

With so many claims made in cigarette advertising, you, Doctor, no doubt prefer to judge for yourself. So won't you make this simple test?

Take a PHILIP MORRIS and any other cigarette

1. Light up either one first. Take a puff—get a good mouthful of smoke—and s-l-o-w-l-y let the smoke come *directly* through your nose.
2. Now, do exactly the same thing with the other cigarette.

You will notice a distinct difference between
PHILIP MORRIS and any other leading brand.

PHILIP MORRIS

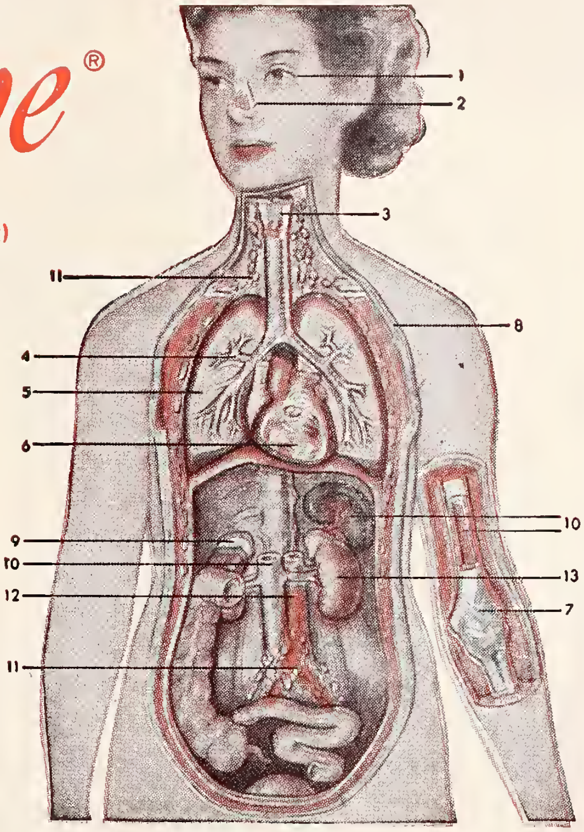
Philip Morris & Co. Ltd., Inc., 100 Park Avenue, New York 17, N. Y.

Cortone®

ACETATE

(CORTISONE ACETATE, MERCK)

The many indications for CORTONE *highlight its therapeutic importance in everyday practice*



Primary Site of Pathology and Indications

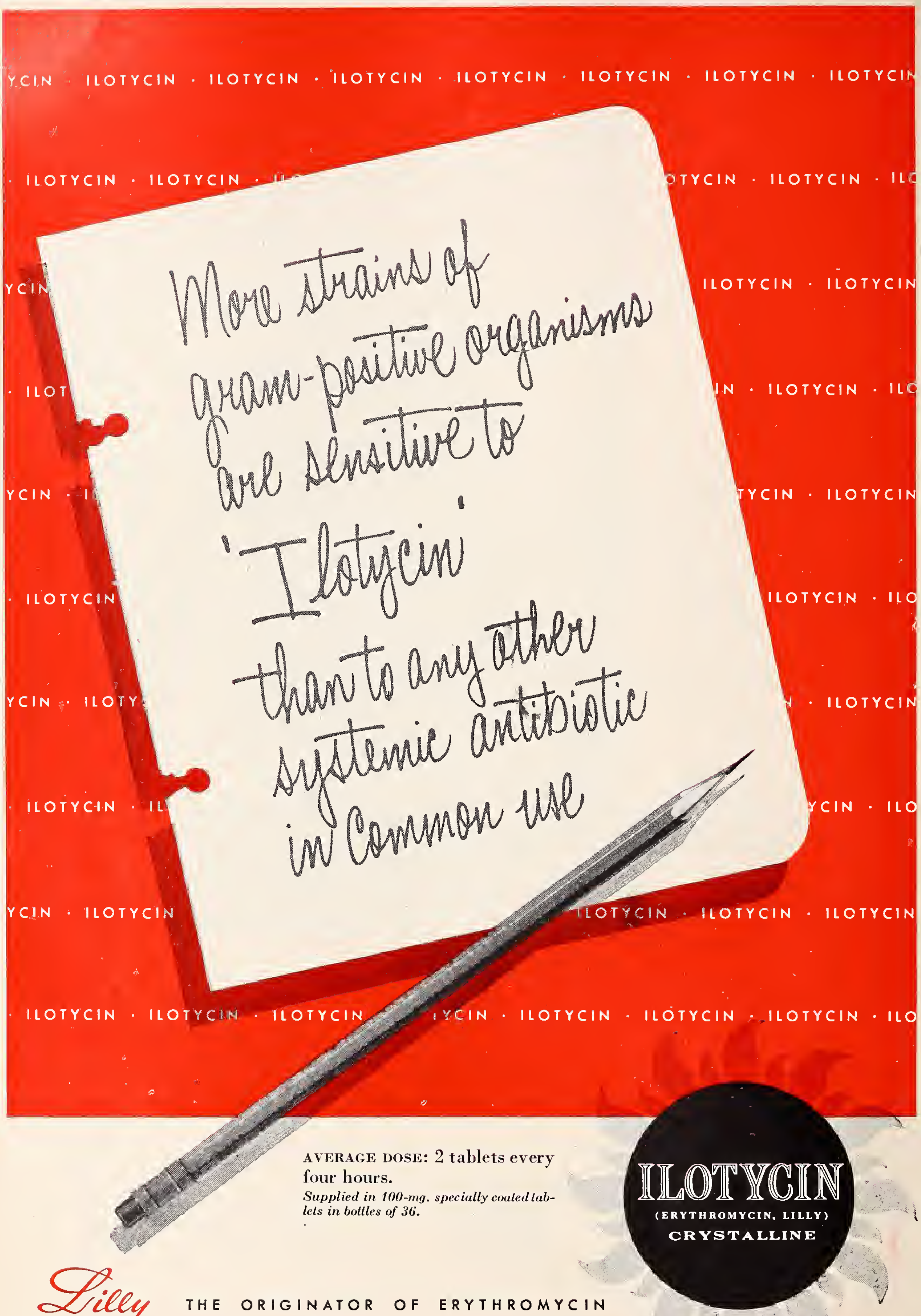
1. EYE—Inflammatory eye disease. **2. NOSE**—Intractable hay fever. **3. LARYNX**—Laryngeal edema (allergic). **4. BRONCHI**—Intractable bronchial asthma. **5. LUNG**—Sarcoidosis. **6. HEART**—Acute rheumatic fever with carditis. **7. BONES AND JOINTS**—Rheumatoid arthritis; Rheumatoid spondylitis; Acute gouty arthritis; Still's Disease; Psoriatic arthritis. **8. SKIN AND CONNECTIVE TISSUE**—Pemphigus; Exfoliative dermatitis; Atopic dermatitis; Disseminated lupus erythematosus; Scleroderma (early); Dermatomyositis; Poison Ivy. **9. ADRENAL GLAND**—Congenital adrenal hyperplasia; Addison's Disease; Adrenalectomy for hypertension, Cushing's Syndrome, and neoplastic diseases. **10. BLOOD, BONE MARROW, AND SPLEEN**—Allergic purpura; Acute leukemia† (lymphocytic or granulocytic); Chronic lymphatic leukemia.† **11. LYMPH NODES**—Lymphosarcoma†; Hodgkin's Disease†. **12. ARTERIES AND CONNECTIVE TISSUE**—Periarteritis nodosa (early). **13. KIDNEY**—Nephrotic Syndrome, without uremia (to induce withdrawal diuresis). **14. VARIOUS TISSUES**—Sarcoidosis; Angioneurotic edema; Drug sensitization; Serum sickness; Waterhouse-Friderichsen Syndrome.

---

†Transient beneficial effects.

CORTONE *is the registered trade-mark of Merck & Co., Inc. for its brand of cortisone.*

MERCK & CO., INC.
Manufacturing Chemists
RAHWAY, NEW JERSEY


ILOTYCIN · ILOTYCIN · ILOTYCIN · ILOTYCIN · ILOTYCIN · ILOTYCIN · ILOTYCIN
More strains of
gram-positive organisms
are sensitive to
'Ilotycin'
than to any other
systemic antibiotic
in common use

AVERAGE DOSE: 2 tablets every four hours.

Supplied in 100-mg. specially coated tablets in bottles of 36.

ILOTYCIN
(ERYTHROMYCIN, LILLY)
CRYSTALLINE

Lilly THE ORIGINATOR OF ERYTHROMYCIN

Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 36 March, 1953 Number 3

AN APPROACH TOWARD THE IDEAL IN PARENTERAL NUTRITION

J. H. STRICKLER, M.D. and CARL O. RICE, M.D.

Minneapolis, Minnesota

IN ORDER that homeostasis be maintained when parenteral nutrition becomes necessary, it would seem reasonable that an artificial or parenteral food should supply elements resembling normal constituents as closely as possible. Such a solution has been prepared and it is the purpose of this paper to evaluate its effectiveness in terms of fluid, nitrogen, and electrolyte balance studies.

A solution of 12 per cent invert sugar, 6 per cent amino acids and 4 per cent alcohol constitutes 1,000 calories per liter and very closely approximates the average normal proportion of food substances in terms of calories as outlined by Best and Taylor[8] in that it contains 48 per cent carbohydrate, 24 per cent protein and 28 per cent fat substitute, or alcohol.

The calorie as a unit of energy may be figuratively considered as a matrix holding the food substances in balance. Many authors have exhibited concern over the absence of calories in present day parenteral nutrition.[10,9,55,41,23,59,57,36,19]

Fluid balance is related to proper nutritional intake.[7] The electrolyte problem is likewise complicated by inadequate caloric intake.[26,41,20,21,56,55]

In scrutinizing the numerous nitrogen balance studies, it is evident that the absence of a standard caloric intake inserts a very large variable that is not considered in most studies. This variable factor likely accounts for disparity in observations. Furthermore, the investigators who have striven for adequacy of caloric supplement have rather consistently achieved a positive nitrogen balance[23] even to the extent of denying the presence of the so-called catabolic impulse of trauma. A good many workers[9,2,5,55,10,17,14,46,56,22,41,60,44,12,36,34,15,16,20,38,19] have all conducted studies bearing upon or demonstrating the need for caloric protection of protein or amino acids.

W. C. Rose[53] found the normal male required forty-five calories per kilogram to obtain nitrogen equilibrium and that fifty-five calories per kilogram were needed to bring about a positive nitrogen balance. Increasing glucose intake also decreases ketone excretion in the urine.[61,42,18]

Glucose as a means of supplying calories has the limitation of producing glycosuria and diuresis when administered in higher concentrations. Fructose and invert sugar appear to considerably improve these limitations since fructose is more rapidly converted to liver glycogen, has considerably less urinary loss and less diuresis. Hydration[3] and nitrogen retention[1] appear to be better on fructose administration than glucose. More rapid utilization appears to be due to more rapid phosphorylation.[13,58] In spite of a low renal threshold for fructose, there is less urinary spillage than from glucose. This is apparently accounted for by the more rapid utilization of fructose.

Fat emulsions have been extensively studied.[55,22,38,15,39] The problems of pyrogenic and hemolytic reactions following storage have not as yet been solved.

Ethyl alcohol contains seven calories per gram, or 5.6 calories per cc. and must of necessity be burned for energy or excreted since alcohol cannot be stored by the body. Ten cc. of absolute alcohol per hour can be metabolized.[27] When

---

Presented before the Minneapolis Surgical Society as part of a Symposium on Fluid Balance and Related Problems in Surgical Patients, March 6, 1952.

alcohol and glucose are given together,[24] alcohol is apparently burned in preference. Several investigators[43,4,11,35,27,32,37] have noted the caloric advantages of alcohol and this protective influence upon the nitrogen balance has been demonstrated by nitrogen balance studies.[48,49,50,51]

One investigator found an increased gastric hydrochloric acid on intravenous alcohol,[40] but another[50] found an identical slight increase on any of several types of intravenous infusions.

It would appear that most all investigators agree that alcohol will not damage the liver if nutrition is adequate.[9,28,30,45,52]

Any parenteral nutrition and particularly a more complete supplement should be administered slowly in order that the circulatory system and fluid compartments not be loaded too quickly and that fluid and electrolyte shifts be not induced by rapid loading. Lusk[31] has demonstrated a reduction of specific dynamic action to zero by small, very frequent feedings of a balanced mixture of oral food. An efficient, practical method of administering a balanced parenteral nutrition is by means of a polyethylene plastic venous catheter as first described by Zimmerman.[62]

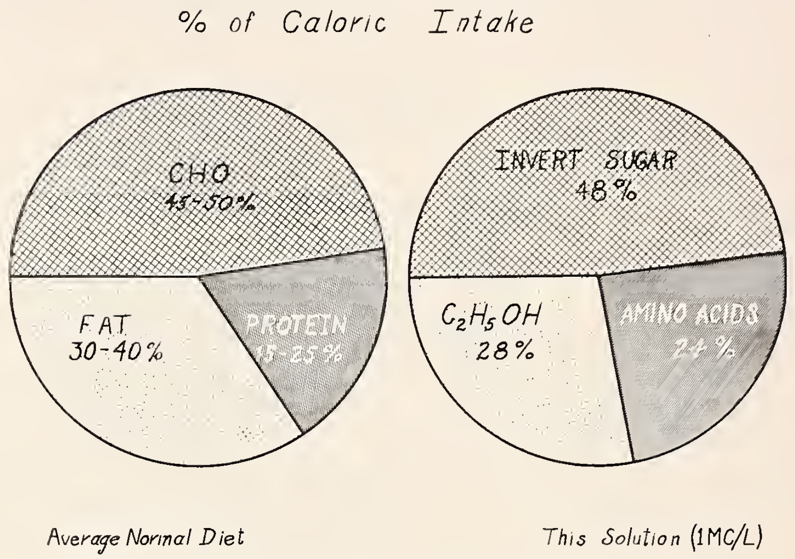


Fig. 1. Per cent of caloric intake.

TABLE I.
SOLUTION CONTAINING 1000 CALORIES PER LITER

	Grams	Caloric Value	Proportion of Calories	
			This Solution 1M C/L	Ideal
Invert Sugar (Carbohydrate)	120 gms.	480 C	48%	45-50%
Amino Acids (Protein)	60 gms.	240 C	24%	15-25%
Alcohol (Fat Substitute)	40 gms.	280 C	28%	30-40%
H_2O (Sufficient quantity)	1000 cc.			
Total		1000 C	100%	

TABLE II. COMPARISON OF VARIOUS FLUIDS

2500 cc of Fluid			Caloric requirement 2500
Glucose 5%	Gms.	Calories	Percent of Cal.
Glucose	125	500	100%
Cal. Balance		20%	
5% Glucose and 5% Amino Acids			
Glucose	125	500	50%
Amino Acids	125	500	50%
Cal. Balance		40%	
5% Glucose, 5% Amino Acids, 5% Alcohol			
Glucose	125	500	27%
Amino Acids	125	500	27%
Alcohol	125	875	46%
Cal. Balance		75%	
1M C/L—Invert Sugar 12%, Amino Acids 6%, Alcohol 4%			
Invert Sugar	300	1200	48%
Amino Acids	150	600	24%
Alcohol	100	700	28%
Cal. Balance		100%	

The solution under investigation in this study contains 1,000 calories per liter, in percentages, as indicated in Figure 1 and Table I.

By calculating the basal caloric requirement from DuBois chart and making sufficient addition (approximately 30 per cent) for bed activity and making addition for specific dynamic action requirement at 8 per cent and then adding 8 per cent more for each degree of temperature above normal, the metabolic requirement can be calculated for each patient and his parenteral nutrition ordered accordingly.

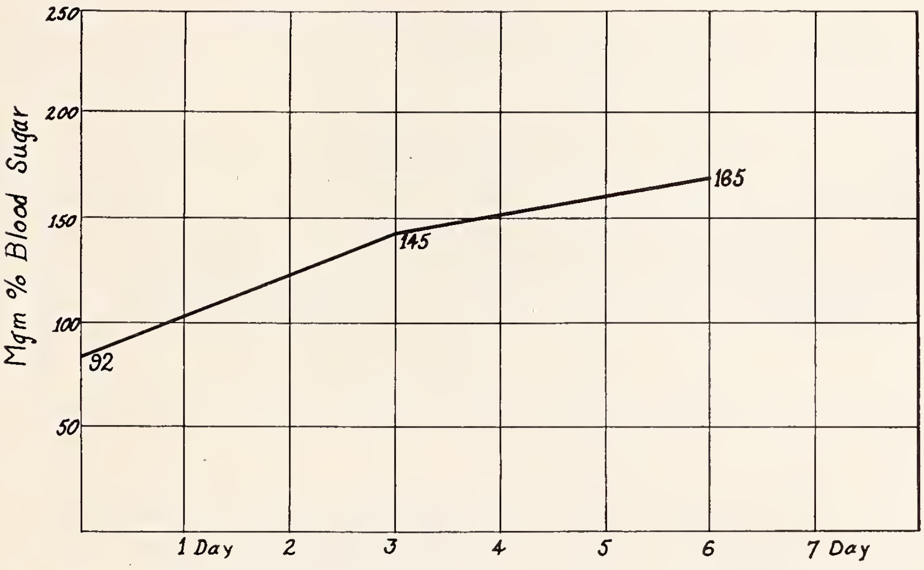


Fig. 2. Blood sugar elevation during continuous administration of a solution containing 1000 calories per liter (invert sugar, 12 per cent; amino acids, 6 per cent; alcohol, 5 per cent).

TABLE III.

Percentage Loss of Sugar in Urine—57 Cases 1M C/L

Day	—4	—3	—2	—1	Day of Surgery	+1	+2	+3	+4
Per Cent	3.9	4.6	4.7	4.6	9.2	6.7	6.5	5.2	6.4

Total Average Loss in 237 days (57 cases) Quantitative Urine Sugar = 5.96%

In addition to meeting the average normal urine output of 1,000-1,500 cc. daily one should calculate and administer a quantity of fluid equivalent to the insensible loss. Darrow has established a method of calculating this loss by employing the factor of 44 cc. of insensible fluid loss per 100 calories metabolized by the individual. If one will then calculate the metabolic requirement in calories by the DeBois chart, it is then also possible to quickly calculate the insensible loss. For a normal individual it is readily seen that one must give about 1 cc. of fluid for each calorie metabolized. The converse is likely true that if one gives the optimal caloric nutrition, the ideal solution should contain 1 calorie per cc. or 1,000 calories per liter.

Table II demonstrates the comparison of various types of parenteral fluid administered at an intake level of 2,500 cc.

In the treatment of a surgical patient, particularly one who has gastrointestinal suction or fistulae losses, such losses must be calculated daily and added to the fluid intake. Likewise, additional fever demands greater fluid intake. It also introduces the requirement for a greater number of calories and thus, as both fluid and caloric requirements are increased, the proper fluid administration by the 1,000 calorie solution will, in the main, also meet the caloric demands of the patient.

Since it is desirable to inject any parenteral alimentation slowly in order that the fluid load upon the circulation is not excessive and in order that the proffered constituents be fully utilized, and since a needle by the usual method would be impractical for a twenty-four-hour period, the desirable ideal is met by use of a polyethylene tube inserted through a No. 15 needle into the basilic vein of the antecubital fossa.

A continuous infusion of solution containing 1,000 calories per liter over several days of time has been followed by numerous methods of study to determine its effect upon the patient's physiologic processes.

Figure 2 demonstrates the effect upon the blood sugar level over the course of a six-day period during which time blood sugar levels have been taken while the intravenous administration is in progress.

Table III describes, in table form, the percentage loss of sugar in the urine during continuous administration of the 1,000 calories per liter solution. Attention may be called to the increase of urine sugar loss on and following the day of operation. This is likely due to the so-called temporary diabetes of trauma and in our opinion represents the standard response to stress.

The blood alcohol levels followed at varying speeds of injection are demonstrated in Figure 3. It may be noted that even though the alcohol administration rate is at a level of 20 cc. per hour a drunkenness level of .15 is not attained. A sedative level at .08 has however, been reached. If the usual rate of administration of the 1,000 calorie per liter solution containing 4 per cent alcohol and administered at a rate of 3,000 cc. in twenty-four hours, or a liter every eight hours, the rate would be roughly 6 cc. per hour, a rate which uniformly gives an almost negligible blood alcohol level. Since the average person can metabolize 10 cc. of absolute alcohol per hour without appreciably elevating the blood alcohol level, we would not anticipate any of the side effects of alcohol.

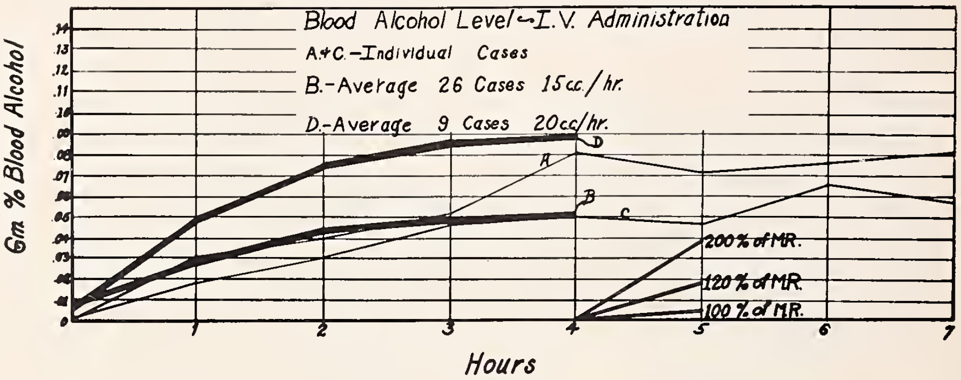


Fig. 3. Blood alcohol level during continuous intravenous administration of alcohol in saline.

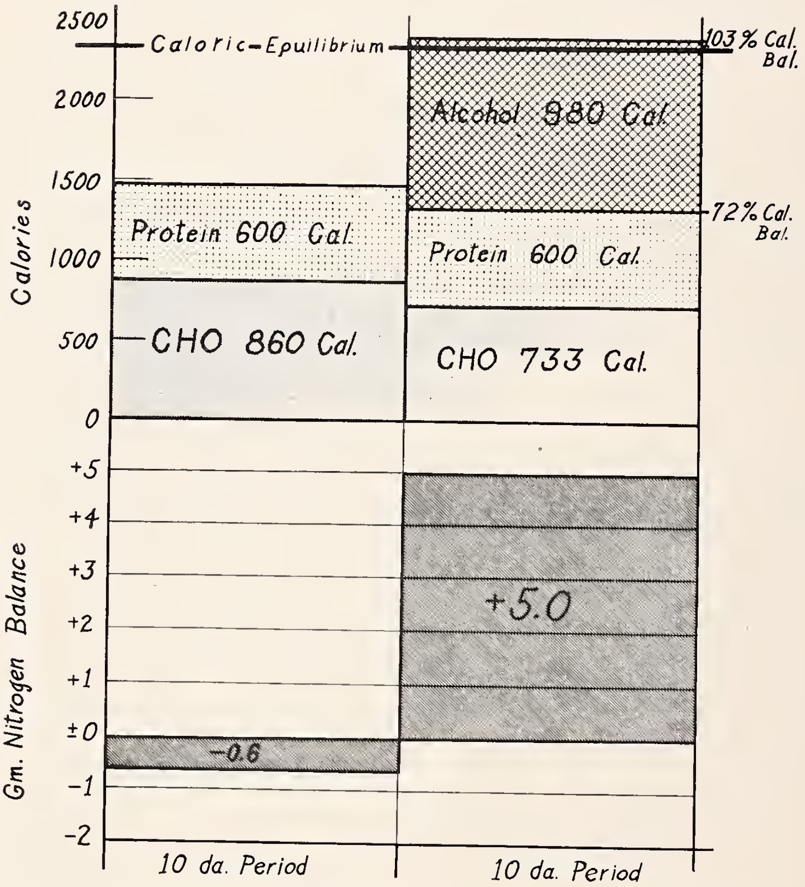


Fig. 4. Nitrogen balance as influenced by the addition of alcohol.

On the same Figure 3 can be seen another representation of the effects of alcohol administration in terms of metabolic requirements. It will be noted that if alcohol is given at the level of metabolic requirement, it will not exceed .01

gms. per cent level. It is only when the metabolic requirement is exceeded that the blood alcohol level will rise.

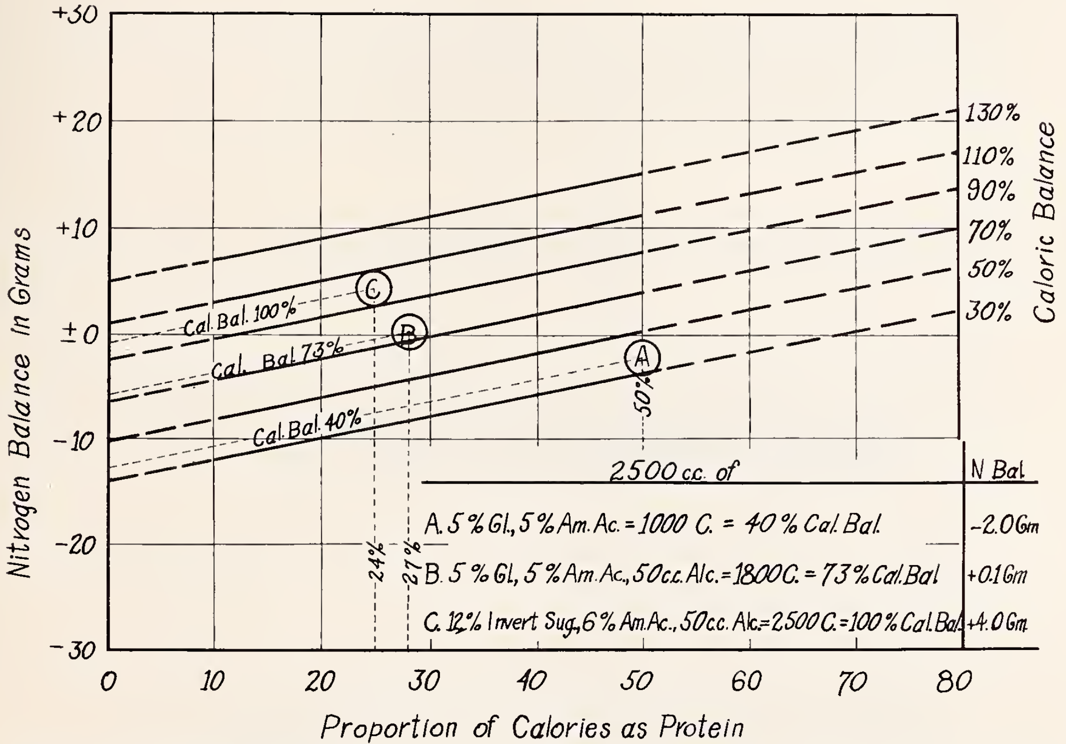


Fig. 5. Range of nitrogen balance in relation to caloric balance depicting three different parenteral solutions.

Since one of the prime purposes for the addition of alcohol and invert sugar to parenteral alimentation is to protect the amino acids from being burned as energy calories and making them available for tissue synthesis, it is therefore important that we scrutinize the influence of such additional calories upon the nitrogen balance. In Figure 4 it may be seen that the addition of alcohol calories brings the patient into caloric equilibrium and a positive nitrogen balance.

Variations in nitrogen balance were observed in many instances and were almost always explainable on the basis of the nitrogen or caloric intake in relation to the metabolic requirements of the patient. Analysis of 298 separate daily nitrogen balance studies revealed variations from time to time which could not be adequately explained until the caloric balance was also taken into consideration. Then when a constant nitrogen and caloric intake was maintained for several days as the patient's condition remained constant, a change in either the caloric or nitrogen intake in relation to the caloric requirement caused a change in the nitrogen balance. It is also evident in the following figure that when the patient was essentially in caloric equilibrium, no difficulty was encountered in obtaining a positive nitrogen balance with an average amount of nitrogen intake. On the other hand, when the patient was in negative caloric balance, he was also in negative nitrogen balance unless the nitrogen intake greatly exceeded the average normal allowance.

By a statistical analysis of three variable factors—caloric balance, nitrogen balance and percentage of protein calories—on a three dimensional association defined in terms of two variable scatters for a series of short limited range of the third variable, it thus became clear that the three variables were all intercorrelated. Figure 5 demonstrates this correlation in a graphic manner.

On the basis of 2,500 cc. of fluid with the percentage of caloric requirements derived from three separate solutions (5 per cent glucose in 5 per cent amino acids; 5 per cent glucose with 5 per cent amino acids and 5 per cent alcohol, and 12 per cent invert sugar, 6 per cent amino acids and 4 per cent alcohol). Figure 5 reveals the influence upon the nitrogen balance in terms of the usual normal fluid requirements. When represented in this way it may be seen that only the 1,000 calories per liter solution can easily attain a positive nitrogen balance without exceeding the normal fluid intake.

Daily blood electrolyte determinations on patients receiving a constant infusion of 1,000 calories per liter solution reveal that a composite or group average fall well within the limits of normal values, thus indicating that a normal electrolyte pattern for homeostasis is maintained. The physiologic ideal is then more closely approached (Figs. 6 and 7).

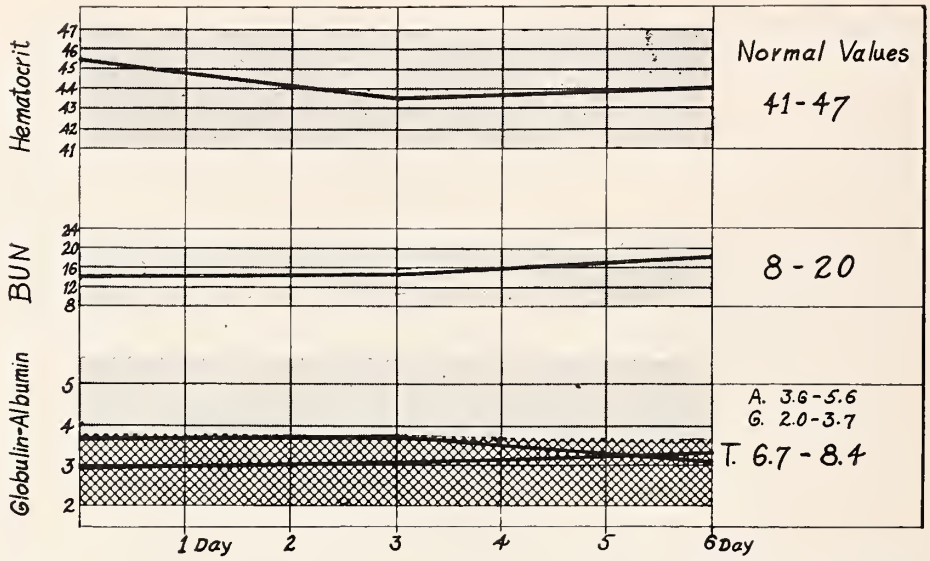


Fig. 6. Blood electrolyte status during administration of a solution containing 1000 calories per liter (invert sugar, 12 per cent; amino acids, 6 per cent; alcohol, 5 per cent).

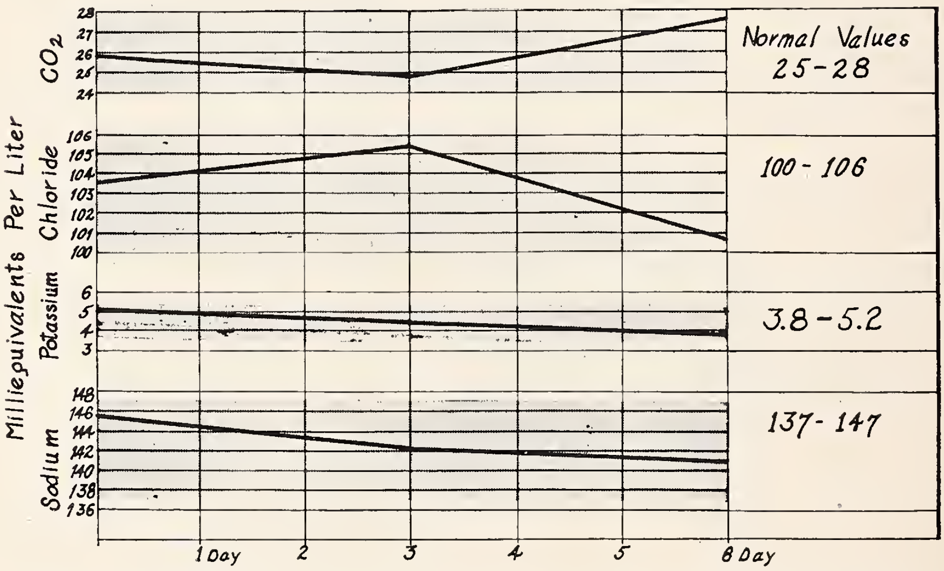


Fig. 7. Blood electrolyte status during administration of a solution containing 1000 calories per liter (invert sugar, 12 per cent; amino acids, 6 per cent; alcohol, 5 per cent).

A most natural inquiry would be, "Can this solution be tolerated by the tissues or in the blood stream at any point where it might infiltrate or meet the blood flow prior to dilution?" The pH of this solution is 5.55 and, although quite acid, has not caused undue reaction in the tissues when infiltrated out of the ordinary intravenous needle. The reaction might be classified as being halfway between that of 5 per cent and 10 per cent dextrose. A phlebitis has been produced but likely not as frequently as that of higher percentages of glucose. When introduced in the desired manner by way of a polyethylene catheter into an arm vein, the only reaction noted is from the polyethylene tube itself. This reaction at the site of entrance of the tube and ascending phlebitis constitute somewhat of a problem which however does not outweigh the advantages of constant comfortable fluid administration. Cautious attention to technique of venous catheterization is apparently the answer to minimizing phlebitis. If the tube is changed to another vein at the earliest sign of phlebitis, then only a very minor reaction is caused.

In order that an assessment of the possible damaging effect upon blood cells at the point of mixture of the solution and blood could be made, an experiment was set up resembling that of the fragility test. Various solutions were compared (Fig. 8).

A final demonstration of the ability of proper and complete parenteral alimentation may be demonstrated from the Figure 9 representing the

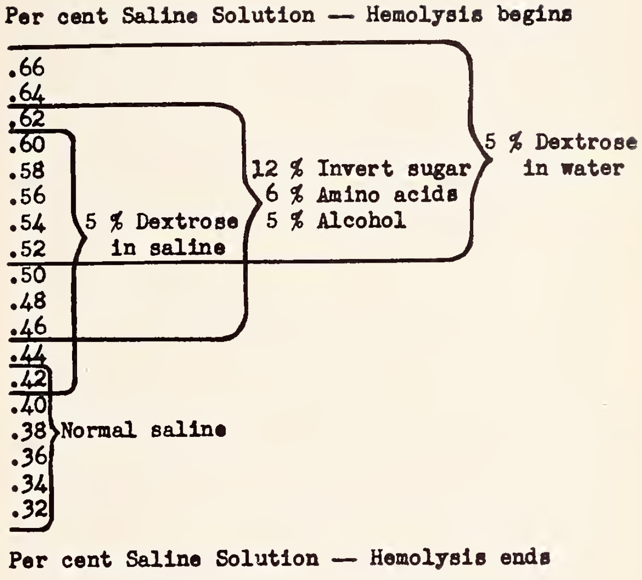

Per cent Saline Solution — Hemolysis begins
.66
.64
.62
.60
.58
.56
.54
.52
.50
.48
.46
.44
.42
.40
.38
.36
.34
.32
5 % Dextrose in water
12 % Invert sugar
6 % Amino acids
5 % Alcohol
5 % Dextrose in saline
Normal saline
Per cent Saline Solution — Hemolysis ends

Fig. 8. Comparison of solutions.

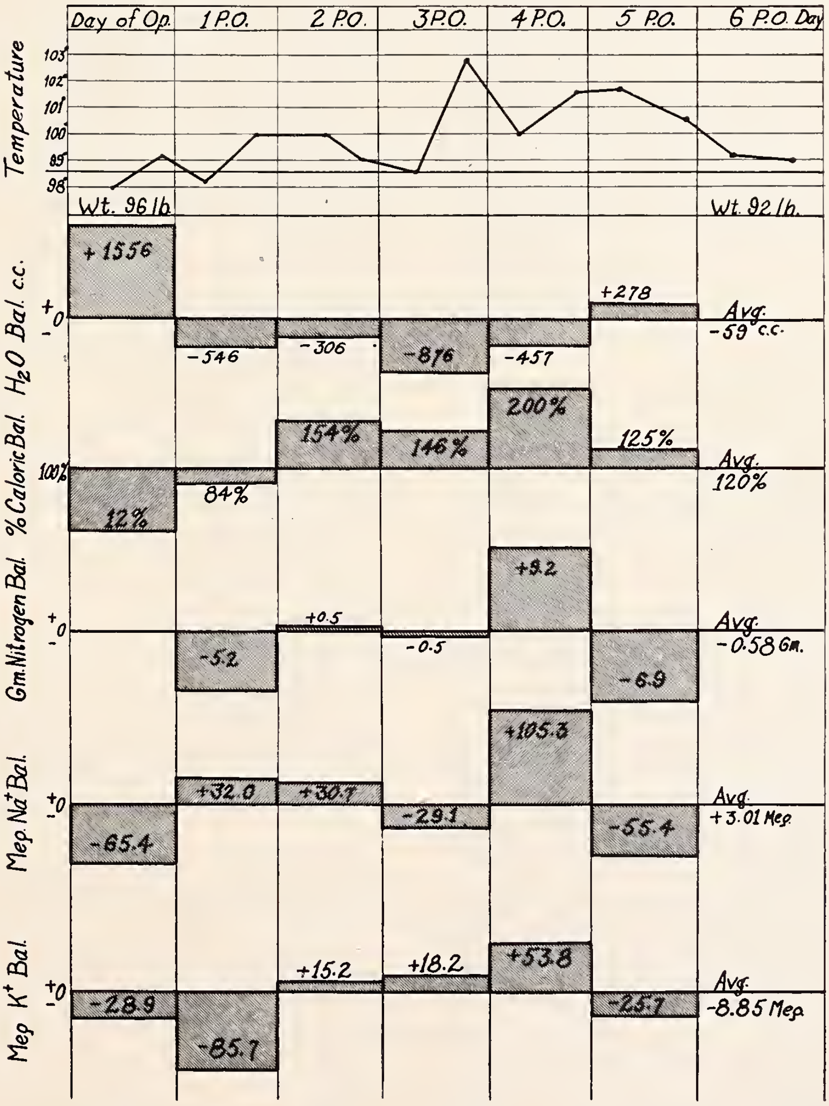


Fig. 9. Mrs. P. B., aged forty; carcinoma of ampulla of Vater; whipple resection.

postoperative course of a patient who had a Whipple resection for carcinoma of the ampulla of vater. It may be seen that almost all of her studies showed a nearly perfect balance and that her clinical course described by the fever chart and the ability to resume complete oral food intake by the sixth postoperative day, indicated rapid surgical recovery.

Conclusions and Summary

1. A solution containing 12 per cent invert sugar, 6 per cent amino acids, 4 per cent alcohol furnishes 1,000 calories per liter and approaches the ideal proportion in terms of normal human intake of the various food substances.

2. Invert sugar can be used in greater concentration without producing as much hyperglycemia or glycosuria as is produced from equivalent percentage of glucose.

3. The blood alcohol elevation is almost negligible at the recommended infusion rate.

4. Additional evidence has been presented supporting the thesis that parenteral protein requires adequate caloric intake for optimal utilization of the amino acids.

5. Slow, continuous, around-the-clock infusion through plastic venous catheter affords best utilization of all constituents of parenteral alimentation.

Bibliography

1. Albanese, A. A.; Felch, W. C.; Higgins, R. A.; Vestal, B. L., and Stephanson, L.: Utilization and protein-sparing action of fructose in man. Metabolism, 1:20, 1952.
2. Altschuler, S. S.; Sakyun, M.; Schneider, H., and Satriana, D.: Clinical use of amino acids for maintenance of nitrogen equilibrium. J.A.M.A., 121:163, 1943.
3. Bachmann, G.; Haldi, J.; Wynn, W.; Ensor, C.: The effects of the ingestion of glucose and of fructose on the rate of excretion of urine and various constituents. J. Nutrition, 16:229, 1938.
4. Behan, R. J.: Ethyl alcohol intravenously as postoperative sedation. Am. J. Surg., 69:227, 1945.
5. Benditt, E. P., and Humphreys, E. M.: The dynamics of protein metabolism. J. Lab. & Clin. Med., 33:257, 1948.
6. Benditt, E. P.; Wolridge, R. L., and Stepto, R.: The dynamics of protein metabolism. II. J. Lab. & Clin. Med., 33:269, 1948.
7. Berry, R. E. L.; Iob, V., and Campbell, K. N.: Potassium metabolism in the immediate postoperative period. Arch. Surg., 57:470, 1948.
8. Best, C. H., and Taylor, N. B.: Physiologic Basis of Medical Practice. Baltimore: Williams & Wilkins Co., 1945.
9. Cannon, P. R.: Amino acid utilization in the surgical patient. J.A.M.A., 135:1043, 1947.
10. Chassin, J. L.: Principles and techniques of protein therapy in surgical patients. Surg., Gynec. & Obst., 91:313, 1950.
11. Coffey, R. R.: Practical points in meeting the poor risk. Surgical and anesthetic risks. J. Missouri M.A., 38:188, 1941.
12. Cole, W. H.; Keeton, R. W.; Calloway, N. O.; Glickman, N.; Mitchell, H. H.; Dyniewitz, J., and Howes, D.: Studies in postoperative convalescence. Ann. Surg., 126:592, 1947.
13. Cori, C. F.: The fate of sugar in the animal body. III. The rate of glycogen formation in the liver of normal and insulinized rats during the absorption of glucose, fructose and galactose. J. Biol. Chem., 70:577, 1926.
14. Co Tui; Wright, A. M.; Mulholland, J. H.; Carabba, V.; Barcham, I., and Vinci, V. J.: Studies in surgical convalescence: sources of nitrogen loss in postgastrectomy and effect of high amino acid and high caloric intake on convalescence. Ann. Surg., 120:99, 1944.
15. Ellison, E. H.; McCleery, R. S.; Zollinger, R. N., and Case, C. T.: Influence of caloric intake upon the fate of parenteral nitrogen. Surgery, 26:374, 1949.
16. Ellison, E. H.; Zollinger, R. M.; Martin, M., and Brown, J. B.: The Importance of Fat as a Source of Calories in Surgical Patients. p. 478 (Surg. Forum Am. Coll. Surg., 1950 Post-Grad. Med. & Surg.) Philadelphia: W. B. Saunders Co., 1951.
17. Elman, R.; Lemmer, R. A.; Weichselbaum, T. E.; Owen, J. G., and Yore, R. W.: Minimum postoperative maintenance requirements for parenteral water, sodium, potassium, chloride, and glucose. Ann. Surg., 130:703, 1949.
18. Elman, R., and Weichselbaum, T. E.: Significance of postoperative glycosuria and ketonuria in nondiabetic adults. Arch. Surg., 62:683, 1951.
19. Engel, F. L.: A consideration of the roles of the adrenal cortex and stress in the regulation of protein metabolism. In Progress in Hormone Research. Edited by G. Pincus. Vol. 6, p. 277. New York: Academic Press, 1951.
20. Gamble, J. L.; Ross, G. D., and Tisdall, F. F.: The metabolism of fixed base during fasting. J. Biol. Chem., 57:633, 1923.
21. Gamble, J. L., and Wallace, W. M.: Diarrhœal dehydration. Fifth International Congress on Pediatrics. New York, 1947.
22. Gorens, S. W.; Geyer, R. P.; Matthews, L. W., and Stare, F. J.: Parenteral nutrition. X. Observations on use of fat emulsions for intravenous nutrition in man. J. Lab. & Clin. Med., 34:1627, 1949.
23. Habif, D. V.; Randall, H. T., and Lockwood, J. S.: The Effect on Nitrogen Retention as the Result of Administering Phosphate Ion with Amino Acids Intravenously. p. 458. (Surg. Forum Am. Coll. Surg., 1950 Post-Grad. Med. & Surg.) Philadelphia: W. B. Saunders Co., 1951.
24. Higgins, H. L.: The rapidity with which alcohol and some sugars may serve as nutriment. Am. J. Physiol., 41:258, 1916.
25. Hoffman, W. S.: Clinical physiology of potassium. J.A.M.A., 144:1157, 1950.
26. Homann, R. E., Jr.: Fluid and electrolyte therapy in surgical patients. Am. J. Surg., 81:10, 1951.
27. Karp, M., and Sokal, J. K.: Intravenous use of alcohol in the surgical patient. J.A.M.A., 146:21, 1951.
28. Larsh, J. E.: The role of reduced food intake in alcoholic debilitation of mice injected with hymenolepsis. J. Parasitol., 33:339, 1947.
29. Lockhart, C. E., and Elman, R.: The effect of intravenous glucose and amino acids on glycosuria and urinary output in humans. Surg., Gynec. & Obst., 88:97, 1949.
30. Lolli, G., and Rubin, M.: Effect of concentration of alcohol on rate of absorption and shape of blood alcohol curve. Quart. J. Stud. on Alcohol, 4:57, 1943.
31. Lusk, G.: The specific dynamic action (Editorial). J. Nutrition, 3:519, 1931.

32. Mendel, L. B., and Hilditch, W. W.: The influence of alcohol upon nitrogenous metabolism in men and animals. Am. J. Physiol., 27:1, 1910.

33. Meng, H. C.: A fat emulsion for intravenous nutrition in rabbits. J. Lab. & Clin. Med., 37:222, 1951.

34. Mok, W. T.; Kozol, D. D., and Meyer, K. A.: Studies in nitrogen metabolism; influence on caloric intake and route of administration of amino acids on nitrogen balance; effect of nitrogen intake on food intake. Surgery, 24:952, 1948.

35. Moore, D. C., and Karp, M.: Intravenous alcohol in surgical patients. Surg., Gynec. & Obst., 80:523, 1945.

36. Moore, F. D.: Adaptation of supportive treatment to needs of the surgical patient. J.A.M.A., 141:646. 1949.

37. Mueller, S.: The use of alcohol intravenously with special reference to its value in severe peritonitis. Surg. Clin. North America, 19:401, 1939.

38. Munro, H. N.: The relationship of carbohydrate metabolism to protein metabolism. III. Further observations on time of carbohydrate ingestion as a factor in protein utilization by the adult rat. J. Nutrition, 39:375, 1950.

39. Murray, R. G., and Freeman, S.: The morphologic distribution of intravenously injected fatty chyle and artificial fat emulsions in rats and dogs. J. Lab. & Clin. Med., 38:56, 1951.

40. Neuman, H. W., and Mehrtens, H. G.: Effect of intravenous injection of ethyl alcohol on gastric secretion in man. J. Exper. Biol. & Med., 30:145, 1932.

41. Pareira, M. D.; Probstein, J. G., and Somogyi, M.: The influence of varying sub-caloric diets on nitrogen loss and recovery following standardized surgical trauma. Surg., Gynec. & Obst., 92:90, 1951.

42. Pareira, M. D., and Probstein, J. G.: Transient diabetes in the postoperative state. Ann. Surg., 133: 299, 1951.

43. Parsonnet, V., and Carp, G. G.: The use of intravenous ethyl alcohol in the postoperative patient. J. Newark Beth Israel Hosp., Orange, New Jersey, 2:249, 1951.

44. Ramasarma, G. B.: Amino acid mixtures as parenteral protein food. Surg., Gynec. & Obst., 93:105, 1951.

45. Ratnoff, O. D., and Patch, A. J.: The natural history of Laennec's cirrhosis of the liver. Medicine, 21:207, 1942.

46. Ravdin, I. S., and Gimbel, N. S.: Protein metabolism in surgical patients. J.A.M.A., 144:979, 1950.

47. Reiman, E. T.: Use of intravenous alcohol for postoperative analgesia and sedation. J. Tennessee M.A., 39:207, 1946.

48. Rice, C. O.; Strickler, J. H.; Orr, B., and Sanderson, D.: Parenteral nutrition. Preoperative and postoperative use of glucose, amino acids and alcohol. Journal Lancet, 68:91, 1948.

49. Rice, C. O.: Intravenous therapy with special consideration of parenteral nutrition. West J. Surg., 57:238, 1949.

50. Rice, C. O.; Orr, B., and Engquist, I.: Parenteral nutrition in the surgical patient as provided from glucose, amino acids and alcohol. Ann. Surg., 131: 289, 1950.

51. Rice, C. O.; Orr, B.; Treloar, A. E., and Strickler, J. H.: Parenteral nutrition in surgery. Significance of calories and protein in maintaining a positive nitrogen balance. Arch. Surg., 61:977, 1950.

52. Rogers, W. N.: Changes in liver and spleen of normal and allergic rabbits after intraparenchymal injections of serum and modifications induced by oral administration of alcohol. Quart. J. Stud. on Alcohol, 7:325, 1946.

53. Rose, W. C.: Amino acid requirements of man. Fed. Proc. Baltimore, 8:546, 1949.

54. Shafiroff, B. G. P., and Mulholland, J. H.: Effects on human subjects of intravenous fat emulsions of high caloric potency. Ann. Surg., 133:145, 1951.

55. Stare, F. J., and Geyer, R. P.: Fat in parenteral nutrition. Surg., Gynec. & Obst., 92:246, 1951.

56. Tarail, R., and Elkinton, J. R.: Potassium deficiency and the role of the kidney in its production. J. Clin. Investigation, 28:99, 1949.

57. Varco, R. L.: Preoperative dietary management for surgical patients. Surgery, 19:303, 1946.

58. Vestling, C. S.; Mylroie, A. K.; Irish, U., and Grant, N. H.: Rat liver fructokinase. J. Biol. Chem., 185:789, 1950.

59. Wangensteen, O. H.: The controlled administration of fluid to surgical patients. Minnesota Med., 25: 783, 1942.

60. Werner, S. C.; Habif, D. Y.; Randall, H. T., and Lockwood, J. S.: Postoperative nitrogen loss: a comparison of the effects of trauma and caloric readjustment. Ann. Surg., 130:688, 1949.

61. Wren, C., and Schar, L.: Amount of carbohydrate required to prevent ketonuria in patients after operation. Surg., Gynec. & Obst., 90:349, 1950.

62. Zimmerman, B.: Intravenous tubing for parenteral therapy. Science, 101:567, 1945.

MEDICAL SCHOOLS IN FINANCIAL NEED

American medical schools need an average of $250,000.00 more each year in order to do a really first-rate job, according to Dr. Ward Darley, president of the Association of American Medical Colleges and vice president and dean of the department of medicine at the University of Colorado.

Chief cause of the financial crisis, according to Dr. Darley, is the 500 per cent increase in operating costs of the medical schools over the past thirty years. Aside from the increased costs of educating medical students, the medical schools also are called upon to help in the instruction of many kinds of health personnel other than future doctors, furnish medical services to the community, and support extensive research activities in order to keep pace with the constantly advancing field of medical science.

Our changing economy also has a part in contributing to the difficulties of the schools, Dr. Darley says. Although in 1941, 35 per cent of the schools' income came from endowment interest, this percentage dropped to 20 per cent in 1948 despite a 21 per cent increase in endowment capital.

While not recommending any single course of action, Dr. Darley summarizes the various ways in which medical schools can brighten their financial picture. These include selling medical and hospital services, increasing community support for operation of teaching hospitals and clinics, recovering the actual costs involved in research programs, receiving larger city and state appropriations, soliciting more and larger gifts, grants and endowments, increasing tuition and, perhaps, accepting federal subsidy.

Dr. Darley noted that in reference to increasing tuition, charges are now an average $623 annually, an increase of 165 per cent since 1939. Increases in tuition will further overburden the financial resources of most students.

THE DIAGNOSIS AND MANAGEMENT OF PERIPHERAL ARTERIAL EMBOLISM

JOHN L. KEELEY, M.D.

Chicago, Illinois

An arterial embolus is a blood clot which usually arises in the heart and is carried peripherally by the blood stream to occlude a femoral artery. Although this is not true in all cases, Danzis[7] found it to be so in over half of 129 cases studied, and more recently Haimovici[16] in a study of 330 unselected cases of peripheral arterial emboli found the heart to be the source of the clot in 96 per cent and a lower extremity the site of lodgement in 84 per cent. Details of etiology, variations in behavior, other sites and degrees of arterial obstruction and, finally, management and prognosis form the basis of this article.

The various sites of origin have a bearing on the physical nature of emboli and are worth considering in detail. The unusual sites of origin and the unusual types of emboli will not be overlooked if the various segments and divisions of the circulation are considered in physiologic order. Paradoxical emboli are those arising from the peripheral venous system as a result of intravascular clotting or the liberation of a portion of a tumor but they can reach the arterial side only if there is a defect in the partition between the right and left heart chambers. Passage of emboli through interventricular septal defects and patent foramena ovale have been reported.[1,18,19,20,24,32] Emboli arising from the pulmonary circulation have been reported and include clot from an area of injured lung and portions of tumor swept away from either a primary[5,36] or metastatic[15] pulmonary lesion. A tumor embolus originating from a primary myxoma of the left ventricle causing occlusion of the renal arteries and the aortic bifurcation has been reported.[40]

Mural thrombi are the most common sources of emboli. In those arising from the left auricle rheumatic heart disease with mitral stenosis is usually present. Mural thrombi in the ventricles are more frequently found on the left and are associated with myocardial infarction in 90 per cent of the cases. Vegetations from the mitral valve in the course of subacute bacterial endocarditis more commonly cause visceral embolic disturbances rather than obstruction of a larger peripheral artery. Uncommonly an arteriosclerotic plaque from the wall of the aorta may become detached and be carried peripherally.

Association of heart disease and peripheral arterial embolization is frequent. McKechnie and Allen[30] found heart disease in forty-one of forty-six patients with peripheral arterial emboli; Willius[39] found emboli in 30 per cent of patients dying of mitral stenosis and cardiac failure; Garvin[12] found mural thrombi in thirty-seven of 116 autopsies in rheumatic heart disease. The heart was the source of the peripheral arterial emboli in 60 per cent of the cases in the extensive review of the literature in 1933 by Danzis,[7] in 50 per cent of the Cook County Hospital series reported by Koucky, Beck and Hoffman[25] in 1940 and in 88 per cent of the Massachusetts General Hospital series reported by Warren and Linton[38] in 1948.

Peripheral arterial embolization should be anticipated in all patients with history of signs of heart disease especially when there is a change in the status of the heart disease. Since small emboli may cause minor occlusions before a major vessel is blocked, premonitory signs such as a twinge of pain, a transient cramp, unexplained muscle soreness or ache, local changes in motor or sensory function of minor degree or changes in skin temperature may precede major embolic occlusion.

The onset of embolic occlusion is usually, but not always, characterized by sudden pain. The presence of pain depends upon the degree of narrowing of the major vessel, the amount of spasm caused, the state of the collateral circulation and the amount of muscle rendered ischemic. Cases have been reported in which complete occlusion of major vessels has occurred without pain (5.7 per cent in Haimovici's series). Occlusion is usually followed by the absence of pulsations and oscillometric excursions. The linear thrust of an occluded vessel due to the impact of the column of blood on the embolus is

---

*From the Department of Surgery, Stritch School of Medicine, Loyola University.

Presented at the Annual Meeting of the Duluth Surgical Society, Duluth, Minn., May 14, 1952.

called Nordentoft's sign and has frequently misled the examiner to conclude that the involved vessel was pulsating normally. The veins empty and sensory and motor paralysis soon follow. There is a drop in the skin temperature, marbling of the skin develops and muscle rigidity occurs in response to the ischemia.

The association of heart disease and peripheral emboli is so frequent that in the absence of auricular fibrillation, coronary occlusion or endocarditis, the diagnosis of pheripheral arterial embolus from a cardiac source must be made with great care.[38] One must then consider the unusual sources of emboli such as an aortic plaque, tumor embolus or paradoxical embolus. Foreign body emboli are rare. They are usually metallic and are related to recent trauma, most commonly gunfire. Accounts of their bizarre migrations are often fascinating.[23]

The differential diagnosis must include thrombophlebitis which often has a sudden onset and is accompanied by enough arterial spasm to render the peripheral pulses feeble so that their presence might be questioned. It occurs as a rule, however, under different circumstances afflicting more commonly patients already at bed rest from a medical illness or in post-partum or post-operative patients. The presence of edema, the lack of motor or sensory paralysis and the absence of demonstrable heart disease will usually suffice to make the distinction. Massive venous thrombosis may produce a picture locally in the extremity which may, for a time, closely simulate arterial occlusion.

Spontaneous thrombosis in a previously diseased and narrowed vessel may occur with such rapidity that embolization may be suspected. Consideration of the age of the patient, the absence of heart disease, the history suggesting gradually diminishing blood supply to the extremities and the physical signs associated with ischemia are the major points in the differentiation. Spontaneous thrombosis may occur in either arteriosclerotic peripheral vascular disease or in thromboangiitis obliterans. Some of the peripheral manifestations of dissecting aneurysm may suggest embolic occlusion but the mode of onset, the changing symptoms as the dissection progresses, and the late disturbance of pulse in either leg should be the basis for differentiation. A ruptured aneurysm of the abdominal aorta may interfere with pulsations in one leg. However, the associated collapse is usually more than is seen with uncomplicated embolic occlusion, and study of the peripheral blood will often suggest hemorrhage.

Very little has been written concerning embolism in infancy and childhood.[8,13] In patients with congenital heart disease sterile vegetations may form on the valves and in the cyanotic group the polycythemia is usually accompanied by increased clotting activity. A patent ductus is not considered an anomaly during the first year of life. However, clot can form in it and can break away from either end of the unobliterated channel. The clot which obliterates the umbilical arteries may extend into the iliac vessels and cause gangrene of an extremity. The diagnosis is, as a rule, difficult and usually is not made until there is obvious circulatory disturbance with marked physical signs. The treatment is conservative because the nature of the occluding mechanism is not always firmly established and because of the technical hazards of embolectomy in small vessels. The amazing capacity of the collateral circulation to provide adequate blood supply further justifies conservatism.

The management of patients in whom peripheral arterial embolism is suspected or in whom the diagnosis appears to be on a sound basis begins with a period of observation. Much can be accomplished during this time by careful evaluation of the general condition of the patient, careful consideration of the probable risk of operation and making arrangements for all the safeguards such as skillful anesthesia, capable assistants, appropriate instruments and materials, blood for transfusion and suitable provisions for the use of anticoagulant therapy. Embolectomy is an emergency procedure and from personal experience it may be said that most embolectomies will be done at odd hours when less experienced personnel are "on call." The surgeon must anticipate all of his needs prior to operation because in the final analysis he alone is held responsible for the clinical result.

In addition to allowing time for suitable preparation a period of observation will enable one to study the effect of antispasmodic treatment by drugs given systemically and by local anesthetic agents used in blocking the sympathetic pathways to the extremity. The response to antispasmodic therapy will enable one to select the cases in which operation is indicated. It will differentiate those conditions which are not embolic and it will disclose the true nature of those conditions in which a minor embolic occlusion has occurred but severe circulatory changes have been caused by superimposed vasospasm. The value of an observation period has been emphasized by Haimovici[16] and Veal and Dugan.[37] The latter authors point out that a good response to a sympathetic block should relieve pain, and restore color, temperature and function. If a good response is not obtained operation is performed. Veal and Dugan state that operation can be done before irreparable damage has occurred after a "safe period" of several hours. This seems quite reasonable since the chances of a successful embolectomy decrease rapidly after six hours.

The site of occlusion also furnishes some indication for the form of treatment; thus conservative management appears to be followed by the best results in the upper extremity. Lund[26] does not believe that operation for axillary or brachial emboli is beneficial. DeTakats[10] says it is seldom indicated, Veal and Dugan elect to treat their cases of upper extremity occlusion conservatively and Blum[5] states that embolic occlusion in the upper extremity runs a benign course. The collateral circulation about the shoulder joint is the greatest factor in maintaining adequate blood supply to the extremity but it can also be pointed out that the degree of circulatory impairment rarely is as marked in the upper extremity as it is in the lower even in the presence of generalized arterial disease. The poor results of embolectomy in the upper extremity may be related to the relatively smaller size of the vessel from which the clot is removed and the tendency for it to be narrowed by subsequent suture. Nevertheless, embolectomy in the upper extremity often stops the pain and may decrease spasm and avoid clotting by extension into the collateral vessels.

Emboli to the vessels of the lower extremity most commonly are arrested at the origin of the profundis femoris and therefore lend themselves to removal under local anesthetic by a femoral arteriotomy. If the clot is lodged in the iliac artery it may be fragmented by maneuvers with probes or by suction with a catheter introduced proximally through the opening in the vessel. The force of the blood proximal to the clot will sweep it into the section of vessel exposed. Care must be used to avoid permitting clot fragments to escape into the vessel distal to the arteriotomy. If one recalls the great tortuosity and calcification found on occasion in the iliac arteries, maneuvers to dislodge clot on these vessels by probing will be done with extreme care and caution.

In saddle embolus of the aorta the outlook without operation is so poor that embolectomy is almost universally accepted as the procedure of choice.[22] The cases in which survival has followed conservative therapy do not appear to be ones in which complete occlusion at the aortic bifurcation was present in previously normal vessels. Transitory arrest of a clot at the bifurcation followed by fragmentation or division of the clot resulting in bilateral iliac obstruction or iliac obstruction on one side and femoral on the other can be confused with saddle embolus. The prognosis in these situations is not the same since the level of gangrene is different. Collateral circulation developed in response to the gradual narrowing of the aorta in the region of the bifurcation may permit survival of an extremity following the complete and sudden occlusion of the remaining narrow lumen.

The general condition of the patient with a saddle embolus will determine the surgical approach and the anesthesia required. The abdominal approach is by far the most satisfactory and is usually made transperitoneally. This direct exposure appears to be more satisfactory for most surgeons although Murray[31] prefers an extraperitoneal route. It has a great advantage in aortic embolectomy in the presence of intraperitoneal sepsis as reported by Schmorell[33] and should be considered in patients with previous peritonitis in order to avoid extensive dissection of adhesions.

An indirect approach to an aortic embolus can be made through the femoral arteries in patients whose general condition does not justify an abdominal approach. Clot can be dislodged from the bifurcation by probing and the force of the blood stream will sweep the fragments distally to the site of the arteriotomy wound from which they can be recovered. Retroperitoneal milking as described by Nystrom has been attempted but this involves passing the hand retroperitoneally along the iliac vessels to the region of the bifurcation and then compressing the vessels while withdrawing the hand. It is difficult to see how this could be accomplished under local anesthesia.

The general principles of embolectomy are essentially the same for all vessels. There must be adequate exposure, control of bleeding from the main vessel and from the collaterals, removal of all clot as shown by adequate flow of blood when the hemostatic tapes are released and re-establishment of pulses, color, warmth and function. There is usually no problem in dislodging clot proximal to the site of embolectomy and allowing the force of the blood stream to clear the main vessel. The problem is to recover the clot which is distal in the main vessel and in the collateral channels. A variety of maneuvers have been employed to accomplish removal of clot distal to the arteriotomy wound. They include the use of probes of many types, suction by means of a catheter and flushing the vessel with solution introduced at a more distal level. The possibility of retrograde milking of the collaterals and the distal portion of the main vessel was considered in a personal case some time ago and more recently was used with success in a case of femoral embolus.[21] The milking effect of a para rubber bandage wrapped tightly from the toes upward brought additional clot to the level of the arteriotomy wound through which it was recovered. It was our opinion that the recovery of the additional clot was responsible for the successful outcome.

The postoperative management must first of all take into consideration the patient's general condition and particularly his cardiac status. Often the patient is recovering or has recovered from an episode of decompensation when the embolus occurs and the stress of embolectomy may bring about decompensation again. Since the survival of the parts concerned depends on adequate oxygen, any improvement in the function of the heart will improve whatever peripheral circulation the condition of the vessels will permit. Likewise any improvement in the oxygen carrying power of the blood will be beneficial and red cell and hemoglobin values should be restored to normal levels by transfusion, due attention being paid to the burden transfusion may place on the cardiovascular system from a volume standpoint and the risk of a possible reaction.

Vasospasm may so limit the amount of blood reaching a part as to jeopardize the outcome of an embolectomy. Repeated lumbar or cervical sympathetic blocks are certainly in order and should be used as long as they appear to be beneficial. As a rule, the outcome of the case begins to be obvious within a few days and needless sympathetic blocks can be avoided. Early in the postoperative course when anticoagulant effect is still probably due principally to heparin the sympathetic blocks can be timed to coincide with lessened anticoagulant activity to avoid hematoma formation. Continuous sympathetic block by repeated infiltration of local anesthetic solutions through an arrangement similar to that used for continuous spinal anesthesia has been used.[35]

Effective anticoagulant therapy should be used in every embolectomy. It prevents reformation of clot at the arteriotomy site and propagation of clot from unrecovered distal fragments in either the main vessel or collaterals. Heparin should be injected through a fine needle directly into the involved vessel proximal to the arteriotomy site before the parietal wound is closed. Directing the needle distally will tend to make a valvelike puncture wound in the vessel. Subsequent anticoagulant therapy of heparin and dicoumarol or tromexan is used until the depression of prothrombin activity due to the longer acting agents is sufficient. If heparin is used in the form of a continuous drip intravenously care must be used to avoid overloading the circulation by two much fluid or salt. Wound hematomas may be troublesome on occasion but are not sufficient reason for omitting anticoagulant therapy.

Physical means to increase the circulation in an extremity may be used but it is difficult to estimate their value. Certainly no harm can come from using Berger's exercises if they do not tax the strength of the patient. The experimental evidence is inconclusive concerning the value of intermittent venous occlusion in increasing the blood supply to an extremity, yet there are many who feel that there is benefit from this adjunct in therapy. Other means to dilate the vessel such as alcohol in proper dosage and reflex vasodilatation by application of heat to other parts of the body may also be employed.

Sympathectomy has been employed as a rule for residual vasospasm but bilateral sympathectomy at the time of aortic embolectomy may be of value as suggested by Albright and Leonard.[2] Leriche seems to be the most prominent proponent of arteriectomy and offers the following indications for its use: poor general condition of the patient where speed is essential, badly damaged arterial wall, late cases (after twenty-four hours), and secondary thrombus formation after embolectomy. The arteriectomy removes an irritable focus which has been described as a trigger point for spasm.

Recurrent and multiple emboli constitute a threat which fortunately is not frequently encountered. Deitch[9] in 1936 reported three embolectomies in the same patient. Groth[14] in 1939 found four of six re-embolectomies reported in the literature successful. McFarlane[28] in 1940 reported four successful embolectomies in the same patient and Scott and Williams[34] in 1949 reported three successful embolectomies in a patient with subacute bacterial endocarditis, an uncommon cause of larger peripheral emboli as a rule.

Recurrence of emboli and the constant threat of embolism in patients with fibrillation have prompted a medical and surgical prophylactic viewpoint. In 1946 Dock suggested that auricular resection be done in cases of recurrent embolization associated with rheumatic heart disease with mitral stenosis and auricular fibrillation. It has been shown experimentally in dogs.[6,17] that no disturbance followed this procedure and it has been used successfully in human beings by Madden,[29] Beal, Longmire and Leake[4] and by Baronofsky and Skinner,[3] but Leonard and Cogan[27] recently reported failure of the procedure in preventing recurrent embolization. This is readily understandable as the clots in rheumatic heart disease with mitral stenosis and fibrillation are not confined to the auricular appendage. It is too early to say whether the surgical procedure will be justified by the results and by the number of cases in which it is applicable.

The medical alternative is the restoration of normal rhythm, which may be impossible in a large majority of the patients, with the institution of prolonged anticoagulant therapy with dicoumarol or one of the newer therapeutic agents of that type.[11]

Summary

A résumé of the sources, behavior and occlusive effects of peripheral arterial emboli is presented. The problems in diagnosis, the basis for choice of treatment and technical problems in management are discussed. Adjunct therapy after embolectomy is described and the problems of recurrent embolization are presented in the light of recent thought and practice.

Bibliography

1. Abbott, M.: Congenital heart disease, Nelson's New Loose Leaf Medicine, 4, 2, Chap. 1, P. 207. New York: Thomas Nelson and Sons.
2. Albright, H. L., and Leonard, F. C.: Embolectomy from the abdominal aorta. New England J. Med., 242:271-277, 1950.
3. Baronofsky, I. D., and Skinner, A.: Ligation of left auricular appendage for recurrent embolization. Surgery, 27:848-852, 1950.
4. Beal, J. M.; Longmire, W. P., and Leake, W. H.: Resection of the auricular appendages. Ann. Surg., 132:517-530, 1950.
5. Blum, L.: Successful removal of a tumor embolus from the femoral artery. J.A.M.A., 142: 986-987, 1950.
6. Burdette, W. J.: Removal of auricular appendages in the dog. Surg., Gynec. & Obst., 89:623-628, 1949.
7. Danzis, M.: Arterial embolectomy. Ann. Surg., 98:249-288, 1933.
8. DeCamp, Paul T.; Ochsner, Alton, and DeBakey, Michael: Thromboembolism in children. Ann. Surg., 133:611-622, 1951.
9. Deitch, H. I.: Three arterial embolectomies in the same patient: including one in each femoral artery. Lancet, 1:455-477, 1936.
10. deTakats, G.: Surgical treatment of acute vascular occlusions. Surg. Clinics, North America, 22:199-220, 1942.
11. Foley, W. T., and Wright, I. S.: Long term anticoagulant therapy for cardiovascular diseases. Am. J. Med. Sci., 217:136-142, 1949.
12. Garvin, C. F.: Mural thrombi in heart. Am. Heart J., 21:713-720, 1941.
13. Gross, R. E.: Arterial embolism and thrombosis in infancy. Am. J. Dis. Child., 70:61-73, 1945.
14. Groth, K. E.: Einege Falle von rezidivierender Arterienembolie in der Extremataten. Arch. f. klin. Chir., 194:413-457, 1939.
15. Groth, K. E.: Tumor embolism of common femoral artery treated by embolectomy and heparin. Surgery, 8:617-632, 1940.
16. Haimovici, H.: Peripheral arterial embolism. A study of 330 unselected cases of embolism of the extremities. Angiology, 1:20-45, 1950.
17. Hellerstein, H. K.; Sinaiko, E., and Dolgin, M.: Amputation of auricular appendages. Surgery, 24: 719-723, 1948.
18. Hirschboeck, F. J.: Paradoxical embolism. Am. J. Med. Sci., 189:236-239, 1935.
19. Ingham, D. W.: Paradoxical embolism. Am. J. Med. Sci., 196:201-207, 1938.
20. Jones, R.: Case of Paradoxical embolism. Brit. Med. J., 2:225, 1936.
21. Keeley, John L., and Rooney, J. A.: Retrograde milking; an adjunct in the technic of embolectomy. Ann. Surg., 134:1022-1026, 1951.
22. Keeley, John L.: Saddle embolus of the aorta. Ann. Surg., 128:257-265, 1948.
23. Keeley, John L.: A bullet embolus to the left femoral artery following a thoracic gunshot wound. J. Thor. Surg., 21:608-620, 1951.
24. Koritschoner, R.: Paradoxical embolism. J.A.M.A., 106:1269-1270, 1936.
25. Koucky, J. J.; Beck, W. C., and Hoffman, J. M.: Peripheral arterial embolism. Am. J. Surg., 50:39-49, 1940.
26. Lerman, J.; Miller, F. R., and Lund, C. C.: Arterial embolism and embolectomy. J.A.M.A., 94: 1128-1133, 1930.
27. Leonard, F. C., and Cogan, M. A.: Failure of the ligation of the left auricular appendage in the prevention of recurrent embolism. New England J. Med., 246:733-735, 1952.

(Continued on Page 262)

A HISTOPLASMIN AND TUBERCULIN STUDY OF PSYCHIATRIC PATIENTS HAVING ABNORMAL CHEST ROENTGENOGRAMS

MILLARD A. TROXELL, M.D.
Saint Paul, Minnesota

DURING the last few years histoplasmosis has assumed increasing prominence in the differential diagnosis of many diseases. Outstanding among these is tuberculosis, together with the pathologic processes ordinarily considered in the differential diagnosis of tuberculosis. Since the relationship of tuberculosis to mental illness has long been recognized, even though the mechanism and degree of relationship remains unknown, it was considered appropriate to investigate a possible relationship between histoplasmosis and mental illness. The results of this study, although inconclusive, are suggestive of such a relationship; for this reason they are considered of sufficient interest for publication.

Early studies with histoplasmin skin tests have indicated an association between histoplasmin sensitivity and pulmonary calcification in tuberculin negative individuals.[4] More recent work has shown that pulmonary infiltrations resembling tuberculous infiltrations occur in these histoplasmin-positive, tuberculin-negative individuals.[5,7] Hilar lymphadenopathy was observed in histoplasmin positive, tuberculin negative infants but the infants had not been followed long enough to determine whether these lesions went on to calcification.[2] Two-thirds of seventy-two asymptomatic Kansas City school children showed nodular, sharply circumscribed foci, one-quarter showed diffuse patchy infiltrations, a few were limited to the lymph node, and a few were disseminated.[7] Cases of infected pulmonary cysts were pathologically diagnosed as histoplasmosis after lobotomy.[9] Schwartz and Spitz[20] mention the non-characteristic roentgenogram in the acute state of histoplasmosis but advise giving the diagnosis serious consideration in the presence of a disseminated pneumonitis. They explain cases showing complete resolution of the infiltrations as having been caused by relatively small doses of the infecting organism; the more intense inflammations supposedly result from greater doses of the infecting organism and take longer to heal, with resultant fibrosis and calcification. The calcification may be confined to the center of the lesion, producing a halo effect. Miliary and somewhat larger calcified nodules scattered diffusely throughout the lung fields strongly suggest the end stage of pulmonary histoplasmosis.[20]

Calcification was two to four times as frequent in histoplasmin positive University of Wisconsin students as in the tuberculin positive.[5] Iams[10] reviewed histoplasmin and tuberculin tests reported prior to his paper and summarized the relation of the tests to pulmonary calcification as follows: 13 per cent were histoplasmin and tuberculin positive; 69.5 per cent were histoplasmin positive and tuberculin negative; 5.3 per cent were histoplasmin negative and tuberculin positive; 12.1 per cent were histoplasmin and tuberculin negative. He quotes J. W. Johnson in a personal communication as finding 8 per cent positive reactors in five hundred tests done in Minneapolis. J. A. Myers of the School of Public Health at the University of Minnesota Medical School, informs me that histoplasmin tests have been routine on new students entering the University of Minnesota since 1947 and that an estimated 10 per cent are reactors. "Usually these students are from areas well to the south of us.[13]

However, in examining a study in student nurses[16] with particular regard to Minneapolis, 4.2 per cent of 2,419 were histoplasmin positive—3.6 per cent of these being tuberculin negative and 0.6 per cent tuberculin positive; 95.8 per cent were histoplasmin negative (a doubtful test is considered negative), 88.5 per cent being tuberculin negative and 7.3 per cent being tuberculin positive. Only sixty-three of the 2,419 had pulmonary calcification, with twenty-eight or 1.1 per cent having positive histoplasmin tests and thirty-one or 1.3 per cent having positive tuberculin tests. If the nine cases which were both histoplasmin and tuberculin positive are omitted, histoplasmosis *could* be suggested as the cause of the calcification in the nineteen (0.8 per cent) histoplasmin

---

A. L. Reichenberg, M.S., gave technical assistance in this study, which was performed in the Division of Research and Training, Hastings State Hospital, Hastings, Minnesota, Ralph Rossen, M.D., Superintendent.

Dr. Troxell is a medical fellow, the University of Minnesota, Division of Dermatology, H. E. Michelson, M.D., Director.

positive and tuberculin negative, and tuberculosis as the cause in the twenty-two (0.9 per cent) histoplasmin negative and tuberculin positive cases. This would seem to suggest tuberculosis and histoplasmosis as equally important causes of pulmonary calcification in this area.*

Other agents must not be ignored as causes of pulmonary calcification. Most non-tuberculous anergic patients usually have no symptoms at all in spite of roentgenograms that look alarming, and these patients are discharged from the sanatorium with the diagnosis of sarcoid disease, bronchiectasis, atypical pneumonia, tracheobronchial lymphadenitis, or one of the fungus infections.[23]

Nevertheless, the cause of abnormal chest roentgenograms should be established if possible, and the study herewith reported was undertaken with this in mind.

Procedure

Exclusive of the receiving wards, the average patient population of the Hastings State Hospital is 900. Of these, 103 had abnormal chest roentgenographic findings. All patients tested had been under consideration as suspected cases of tuberculosis, on the basis of miniature film reports from the Minnesota State Health Department Division of Tuberculosis mass survey, and also from reports of chest films taken here. Repeated gastric lavages on these patients were negative except in the case of one histoplasmin negative and tuberculin positive patient discovered after the testing was done. He was immediately transferred, since no proven case of tuberculosis is allowed to remain at this institution.

For convenience the patients were tested in three working groups, the basis of selection being their ward of residence at the institution. Three different shipments of histoplasmin were used.** Three different shipments of tuberculin diluted 1:1000 were obtained from the Minnesota State Department of Health. In all cases the test material was used within two weeks of receipt. An amount of 0.1 cc. was injected intradermally into the volar forearm; in most cases the tests were done at the same time—the left forearm being tested with histoplasmin and the right with tuberculin. Immediately after skin testing, blood was drawn for complement fixation testing and was airmail shipped the same day. The author did all the skin testing and interpreting. The tests were interpreted forty-eight hours after testing by measuring two perpendicular diameters and recording the erythema, edema, and necrosis, if any. Then the degree of positivity was later calculated from the larger diameter according to accepted Minnesota Health Department standards for tuberculin test interpretation:

1 plus reaction—slight but definite edema not more than 10 mm. raised about 1 mm.
2 plus reaction—well defined edema 10-15 mm. in diameter raised somewhat more than 1 mm.
3 plus reaction—extensive edema more than 15 mm. in diameter and raised more than 2 mm. There might be some redness along a lymphatic, but no necrosis.
4 plus reaction—extensive edema, redness, and a spot of necrosis.

In accordance with well established precedent, a positive reaction to histoplasmin was not diagnosed unless the edema measured 5 mm. or over. Readings from the first working group were taken at forty-eight and also seventy-two hours, but no difference in the test readings was noted in those thirty patients. Consequently, tests were read only at forty-eight hours in the other two working groups.

Results

Of the 103 patients tested, ninety-five were tuberculin positive and forty were histoplasmin positive. For analysis (Table I) the patients were divided into two groups: (1) histoplasmin positive, and (2) histoplasmin negative, to see if there were any essential difference in the two groups. Complement fixation tests for histoplasmosis were done at the Federal Security Agency Communicable Disease Center in Chamblee, Georgia, on sera drawn from all patients skin tested, and results were entirely negative. Complement fixation tests for blastomycosis and coccidioidomycosis were also done on sera from the first working group of thirty patients, and these were also completely negative.

For comparison, the roentgenographic findings of the seven patients who were tuberculin and histoplasmin negative are given: Four (57.2 per cent) showed apical densities; two (28.5 per cent) showed apical fibrosis; and one (14.3 per cent) showed basal densities. The one patient who had a histoplasmin positive and a tuberculin negative reaction showed apical fibrosis with no calcification.

---

*The Hastings State Hospital is approximately twenty-five miles southeast of the Twin Cities.

**Supplied on request by Dr. M. L. Furcolow.

I would have preferred to find more histoplasmin positive, tuberculin negative patients, but this was not to be. In a way this is an advantage because nearly all (92 per cent) of the patients tested were tuberculin positive, and thus the patients could be divided into histoplasmin positive and histoplasmin negative groups with the factor of tuberculin sensitivity held constant, as it were.

The test results can be summarized as follows (Table I):

1. The average age and length of hospitalization of the two groups were nearly identical.

2. There was little difference in the psychiatric diagnoses, with the exception of a greater incidence of histoplasmin sensitivity in the paretics and a greater incidence of histoplasmin negativity in the manic depressives. No significance is attached to these findings.

3. Of the forty positive histoplasmin tests only one (2.5 per cent) was four plus, and only two (5.0 per cent) were three plus.

4. The incidence of apical densities in the histoplasmin positive group was only half that of the histoplasmin negative group. On the other hand, the incidence of apical fibrosis in the histoplasmin positive group was over twice that of the histoplasmin negative group. The histoplasmin positive group showed twice the incidence of pulmonary calcifications as compared to the histoplasmin negative group. However, six of the seven "anergic" patients showed apical densities or fibrosis.

5. There was a greater incidence of four plus tuberculin reactions in the patients who reacted to histoplasmin than in the patients who did not.

6. The tuberculin skin test showed a more intense reaction in thirty-four (85 per cent) of the patients who reacted to both test materials.

TABLE I.

	Histoplasmin positive		Histoplasmin negative	
Number of patients	40		63	
Average age	62 years		61 years	
Average length of hospitalization	24 years		23 years	
Psychiatric Diagnosis				
Schizophrenia	24	60.0%	35	55.5%
Manic-Depressive	3	7.5%	11	17.4%
Psychosis with Psychopathic Personality	2	5.0%	1	1.6%
Senile Psychosis	4	10.0%	6	9.5%
Paresis	4	10.0%	2	3.2%
Involutional Melancholia	2	5.0%	0	0.0%
Organic Psychosis	0	0.0%	2	3.2%
Psychosis with Mental Deficiency	0	0.0%	3	4.8%
Alcoholic Psychosis	0	0.0%	1	1.6%
Undiagnosed	1	2.5%	2	3.2%
Main Roentgoenographic Finding				
Apical densities	9	22.5%	28	44.5%
Nodular	2	5.0%	3	4.8%
Mottled	1	2.5%	1	1.6%
Soft	1	2.5%	1	1.6%
Not specified	5	12.5%	23	36.5%
Apical fibrosis	19	47.5%	13	20.6%
Without calcification	12	30.0%	12	19.0%
With calcification	7	17.5%	1	1.6%
Apical infiltration	2	5.0%	1	1.6%
Pleural thickening	5	12.5%	3	4.8%
Hilar calcification	2	5.0%	7	11.1%
Basal densities	3	7.5%	11	17.4%
Calcification (Apical and Hilar)	9	22.5%	8	12.7%
Reaction of Tuberculin Tests				
4 plus	20	50.0%	20	31.8%
3 plus	12	30.0%	18	28.6%
2 plus	6	15.0%	14	22.2%
1 plus	1	2.5%	4	6.3%
Negative	1	2.5%	7	11.1%
Reaction of Histoplasmin Tests				
4 plus	1	2.5%		
3 plus	2	5.0%		
2 plus	10	25.0%		
1 plus	27	67.5%		
Comparison of Tuberculin and Histoplasmin Reactions				
Tuberculin more than Histoplasmin	34	85.0%		
Tuberculin equal to Histoplasmin	3	7.5%		
Tuberculin less than Histoplasmin	2	5.0%		
Tuberculin negative; Histoplasmin 1 plus	1	2.5%		

7. Histoplasmin complement fixation tests on all 103 patients were negative.

Discussion

No reference to a numerical gradation of the histoplasmin test was found in the literature reviewed. A complicated system using capital letters of the alphabet has been used.[16] However, Keeney,[11] states that the histoplasmin skin test is performed by injecting 0.1 cc. of a 1:1000 dilution of Histoplasma capsulatum broth filtrate and is interpreted in the same manner as the tuberculin test. Hence, grading histoplasmin tests into one, two, three, and four plus seems logical.

It is extremely difficult to evaluate the mass of histoplasmin tests reported in the literature. Many different lots and dilutions of histoplasmin have been used. The reader is referred to an article by Shaw et al[21] for further information.

Considerable doubt has been raised regarding the usefulness of the histoplasmin test. Olson, Bell and Emmons[15] state that the histoplasmin skin test is not specific for histoplasmosis in animals and no evidence has been found that the reaction is specific for histoplasmosis in humans. These conclusions are based on histoplasmin tests in guinea pigs, rabbits and man. Prior et al[17] state "in the many thousands of histoplasmin tests applied to man in this country very few have actually detected histoplasmosis. For this reason many doubt the diagnostic value of the histoplasmin skin test." They regard the test in dogs in a more favorable light, however, since only five of 837 tested were positive and three of the five were proved to have active, naturally occurring histoplasmosis. All three had failed to react to tuberculin. Emmons et al[6] reported positive histoplasmin reactions in animals experimentally infected with blastomycosis, coccidioidomycosis and haplosporangiosis, but Christie and Peterson[3] concluded that the cross reactions noted by Emmons are not seen in humans. Saslaw and Prior[18] conservatively note that a positive skin test may serve to include the disease in the differential diagnosis but there may be no skin reaction in fulminating or disseminated disease. This seems a sensible interpretation of the problem.

The complement fixation test does not seem to be much greater help in attempting to find the cause of persistent pulmonary infiltrations and calcifications. Complement fixation and collodion agglutination tests are usually of value in the early acute phase of the disease.[18] Saslaw and Campbell[19] found strong agglutination between histoplasmin sensitized collodion particles and sera from all of three patients in the acute phase of histoplasmosis but the titre of the serum was appreciably decreased after two months of the disease and three chronic cases showed a lack of significant circulating antibodies. According to the authors there was implicated a transient type of antibody response to Histoplasma capsulatum following infection. The same authors,[1] using ground yeast phase antigens of Histoplasma capsulatum, found that sera from three acute cases fixed complement in high titre while sera from three chronic cases did not vary appreciably from titres found in a small percentage (viz. 5.9 to 7.7 per cent) of a normal population. However, Furcolow, Bunnell, and Tenenberg[8] used histoplasmin as antigen and found that the fourteen positive complement fixation tests among 300 human sera tested all belonged in a small group of fifty-eight persons. Nine of these were definitely proved cases, thirteen had recently acquired histoplasmin skin sensitivity, and thirty-six had unhealed lung lesions "characteristic of those associated with histoplasmin skin sensitivity."

The tuberculin test also deserves discussion. The 1:10,000 dilution has been widely used. Since the 1:1,000 dilution is in common use, it would seem that the use of the weaker preparation would merely increase the number of tuberculin negative patients. If these patients tested histoplasmin positive, erroneous conclusions could be reached. Indeed—Woodruff[23] mentions that in 1,376 patients admitted to a sanatorium because of roentgenographic or other findings suggestive of tuberculosis—1,302 or 94.7 per cent reacted to 1:1,000, 1:10,000, or 1:100,000 dilutions of tuberculin, and 1,125 or 86.4 per cent reacted to 1:10,000 or 1:100,000 dilutions. Hence 8.3 per cent more patients were tuberculin positive when tested with the 1:1,000 dilution. On the other hand, only 5 per cent of the patients were "anergic"—either because they were critically ill with tuberculosis or because they did not have tuberculosis at all. Woodruff would have obtained over two and one-half times the number of tuberculin negative patients by testing only with tuberculin diluted 1:10,000 or 1:100,000. I have come to believe that many of the "histoplasmin positive, tuberculin negative" patients reported as such are not truly tuberculin negative, and use Woodruff's statistics to add weight to this statement. Furthermore, Weissfeiler[22] concludes that tuberculous infection is accompanied by an increased sensitivity to non-specific antigens as well as to various components of the tuberculosis bacillus. This mechanism *could* account for some of the histoplasmin positives.

The relationship between tuberculosis and mental illness has been long recognized. Fifty-three references on this relationship were mentioned in the publication by Nolan Lewis,[12] and these references include only the years 1922 to 1935! Oechsli[14] mentions a higher incidence (7.5 per cent) of tuberculosis in patients with dementia praecox as compared to the incidence of tuberculosis (4.8 per cent) in patients with other psychiatric diagnoses in California mental institutions. He ascribes this to the longer periods of residence of patients with dementia praecox, with consequent greater opportunity to acquire tuberculosis. In contrast, the incidence in recently admitted patients was 1.6 per cent, or about the incidence observed in the California general population.

Because of the difficulties in distinguishing findings due to histoplasmosis and tuberculosis on pulmonary roentgenograms, and with the widespread distribution of histoplasmosis now being reported, a similar increased incidence of histoplasmosis could be expected in mental institutions. It was not possible to test all 900 patients at Hastings State Hospital, but forty reactors in the 103 patients tested (38.9 per cent) is a vastly greater incidence over that previously found in this area.

Conclusions

1. Neither the histoplasmin skin test nor the histoplasmosis complement fixation test has helped establish the cause of "suspicious" pulmonary roentgenograms in the 10 per cent of our patients who have them.
2. Caution is recommended in assuming patients to be tuberculin negative unless they are tested with the 1:1,000 dilution of tuberculin.
3. There may be an increased incidence of histoplasmin reactors among patients at state mental institutions. Thirty-nine per cent of patients tested were positive, as opposed to incidences of 4 to 10 per cent previously found in this immediate area.

References

1. Campbell, C. C., and Saslaw, S.: Use of yeast-phase antigens in a complement fixation test for histoplasmosis. III. Preliminary results with human sera. Pub. Health Rep., 64:551-560 (May 6) 1949.
2. Christie, A.: Histoplasmosis and pulmonary calcification. Ann. New York Acad. Sc., 50:1283-1298 (Sept. 6) 1950.
3. Christie, A., and Peterson, J. C.: Histoplasmin sensitivity. J. Pediat., 29:417-432 (Oct.) 1946.
4. Christie, A., and Peterson, J. C.: Pulmonary calcification in negative reactors to tuberculin. Am. J. Pub. Health, 35:1131-1147 (Nov.) 1945.
5. Dickie, H. A., and Clark, E. A.: Histoplasmin and tuberculin sensitivity in relation to pulmonary calcifications among University of Wisconsin students. Ann. Int. Med., 28:1087-1093 (June) 1948.
6. Emmons, C. W.; Olson, B. J., and Eldridge, W. W.: Studies of the role of fungi in pulmonary disease. I. Cross reactions of histoplasmin. Pub. Health Rep., 60:1383-1394 (Nov. 23) 1945.
7. Furcolow, M. L., and Mantz, H. L.: The roentgenographic appearance of persistent pulmonary infiltrates associated with sensitivity to histoplasmin. Pub. Health Rep., 62:1711-1718 (Dec. 5) 1947.
8. Furcolow, M. L.; Bunnell, I. L., and Tenenberg, D. J.: A complement fixation test for histoplasmosis. II. Preliminary results on human sera. Pub. Health Rep., 63:169-173 (Feb. 6) 1948.
9. Hodgson, C. H.; Weed, L. A., and Clagett, O. T.: Pulmonary histoplasmosis: review of published cases and report of an unusual case. J. Thoracic Surg., 20:97-104 (July) 1950.
10. Iams, A. M.: Histoplasmin skin test. Ann. New York Acad. Sc., 50:1380-1387 (Sept. 6) 1950.
11. Keeney, E. L.: Hypersensitivity to pathogenic and non-pathogenic fungi. Ann. Int. Med., 33:418-430 (Aug.) 1950.
12. Lewis, N. D. C.: Research in Dementia Praecox. New York National Committee for Mental Hygiene, 1936.
13. Myers, J. A.: Personal communication. (August 20) 1952.
14. Oechsli, W. R.: Tuberculosis control program of nine California mental institutions—results of initial chest X-ray survey. Pub. Health Rep., 64:4-16 (Jan. 7) 1949.
15. Olson, B. J.; Bell, J. A., and Emmons, C. W.: Studies on histoplasmosis in a rural community. Am. J. Pub. Health, 37:441-449 (April) 1947.
16. Palmer, C. E., and Petersen, O. S.: Studies of pulmonary findings and antigen sensitivity among student nurses; V. Doubtful reactions to tuberculin and to histoplasmin. Pub. Health Rep., 65:1-32 (Jan. 6) 1950.
17. Prior, J. A.; Cole, C. R., and Torbet, V.: An evaluation of the histoplasmin reaction in the detection of naturally occurring histoplasmosis in dogs. Pub. Health Rep., 64:1562-1566 (Dec. 2) 1949.
18. Saslaw, S., and Prior, J. A.: The relationship of proved histoplasmosis to histoplasmin skin sensitivity in Ohio. Ohio State M. J., 48:229-231 (March) 1952.
19. Saslaw, S., and Campbell, C. C.: A collodion agglutination test for histoplasmosis. Pub. Health Rep., 64:424-429 (April 1) 1949.
20. Schwartz, B., and Spitz, L. J.: Histoplasmosis in epidemic form; A follow-up study. Arch. Int. Med., 89:541-546 (April) 1952.
21. Shaw, L. W.; Howell, A., Jr., and Weiss, E. S.: Biological assay of lots of histoplasmin and the selection of a new working lot. Pub. Health Rep., 65:583-609 (May 5) 1950.
22. Weissfeiler, J. K.: Mechanism of immunity and allergy in tuberculosis. Pub. Health Rep., 63:190 (Feb. 6) 1948.
23. Woodruff, C. E.: On the verification of the diagnosis of tuberculosis. Pub. Health Rep., 63:184-189 (Feb. 6) 1948.

NEUROSYPHILIS

ROBERT R. KIERLAND, M.D.
Rochester, Minnesota

TREMENDOUS advances have taken place in syphilotherapy in the past twenty years. These range from the seemingly endless courses of arsenicals, bismuth, mercury, iodides with or without fever in the form of malarial therapy, Kettering hyperthermy, typhoid vaccine, hot baths and blankets, and even other supplemental types of treatment such as Swift-Ellis therapy or one of its modifications, to the present-day therapy with penicillin.

In spite of the great simplicity and efficacy of therapy with penicillin, and in spite of the great reduction in the number of patients with all forms of syphilis, the patient himself remains the same and has the same signs and symptoms that he would have had if he had been seen twenty or thirty years ago.

The diagnosis of neurosyphilis, of course, depends on the history, complete physical examination, including a neurologic examination, and on confirmation by a serologic test for syphilis and examination of the cerebrospinal fluid. The exception to this may be seen in cases of arrested locomotor ataxia in which the results of a serologic test for syphilis and examination of the cerebrospinal fluid may be normal, but in such cases thorough neurologic examination will point out the diagnosis. Thorough examination is necessary because patients who have been thought to have arrested locomotor ataxia later have been found to have Adie's syndrome or pseudotabes of diabetes.

In the short time available for this presentation, it is impossible to speak of neurologic examination further or to discuss the classification of neurosyphilis extensively.

There is almost no limit to the many manifestations that may be due to neurosyphilis. The pathologic changes are both inflammatory and degenerative, and the type of neurosyphilis encountered depends upon which change is present, whether or not there are combinations of both, and the site of involvement within the central nervous system.

The Co-operative Clinic Group a number of years ago classified neurosyphilis, and the following classification is a minor modification of the one by this group.

I. Asymptomatic neurosyphilis.
II. Acute meningeal neurosyphilis.
III. Meningovascular neurosyphilis.
IV. Vascular neurosyphilis.
V. Locomotor ataxia (tabes dorsalis) with or without optic atrophy.
VI. Dementia paralytica (general paresis).
VII. Taboparesis.
VIII. Rare types of neurosyphilis.
  A. Gumma of brain or spinal cord.
  B. Syphilitic epilepsy without paresis.
  C. Erb's spastic paraplegia.
  D. Eighth-nerve deafness.
  E. Primary optic atrophy.

The absolute certainty that a few of these conditions are due to syphilis is sometimes remote in any individual case and may depend upon a therapeutic trial or even necropsy, for, in certain cases, that is, in cases of vascular neurosyphilis, epilepsy, gumma of brain or spinal cord, eighth-nerve deafness or optic atrophy without locomotor ataxia, the cerebrospinal fluid may be normal. Nevertheless, the diagnosis of active neurosyphilis usually cannot be made without the demonstration of abnormal changes in the cerebrospinal fluid. The previously mentioned exceptions should be noted. These abnormal changes in the cerebrospinal fluid in order of importance are: (1) increased cell count, (2) increased concentration of protein, (3) positive serologic reaction for syphilis and (4) abnormal result of the colloidal gold test.

The cell count is usually the first abnormality seen and is the finding of greatest value in determining response to treatment, for the trend toward normal appears rapidly. The opinions of laboratory workers and syphilologists differ as to what the upper limit of normal is. It usually is

---

From the Section of Dermatology and Syphilology, Mayo Clinic, Rochester, Minnesota.

Read at the meeting of the American Academy of Dermatology and Syphilology, Chicago, Illinois, December 6-11, 1952.

considered to be between five and seven lymphocytes per cubic millimeter without any polymorphonuclear leukocytes.

The values for protein again vary slightly from laboratory to laboratory, but values up to 35 to 40 mg. per 100 cc. may be considered normal. The values for protein are increased early in cases of active neurosyphilis, and after treatment is started they usually begin to revert to normal shortly after the cell count does. Occasionally, and without known reason, the values for protein may remain elevated for a long time, even when other tests show a steady significant trend or even a return to normal.

The positive result of a serologic test for syphilis, which preferably should be a complement-fixation test, which is confirmatory of a diagnosis of neurosyphilis, occasionally may be the first abnormality found in the cerebrospinal fluid although such a positive reaction usually follows abnormalities of the cell count and values for protein. After treatment, the quantitative complement-fixation reaction usually decreases in titer but only becomes negative months or even years after the values for the protein and cell count have reverted to normal, even in cases in which the response to treatment is favorable.

The result of the colloidal test, which now in most laboratories is known as the "colloidal gold test," also exhibits abnormalities, but the type of reaction does not always indicate the type of neurosyphilis encountered clinically. The result of this test, like the result of the complement-fixation reaction, very slowly reverts to normal after treatment is started. Peculiarly, in cases in which patients were treated with aureomycin at the Mayo Clinic, which I shall mention later, the result of the colloidal gold test exhibited a far more rapid reversion to normal than in cases in which patients were treated by penicillin or other methods.

The response of these tests to treatment has been the subject of interest and investigation by syphilologists for many years, and from these investigations has come the frequently called Dattner-Thomas concept which states that the results of cerebrospinal-fluid tests accurately reflect the activity of a syphilitic process in the central nervous system. This concept of cerebrospinal-fluid findings in cases of neurosyphilis has been summarized as follows by Thomas:

"1. Signs and symptoms of neurosyphilis are not reliable criteria of the activity of a syphilitic process in the central nervous system, because they may persist or become more marked as a result of past activity, or there may be transitory clinical improvement without a complete arrest of the syphilitic process as shown by spinal fluid findings. Also, the syphilitic infection may be very active within the central nervous system and still be asymptomatic.

"2. A positive spinal-fluid Wassermann test alone is not proof of active neurosyphilis. It merely indicates the specific nature of the infection, which may be already inhibited or completely checked at the time when the spinal fluid is examined. Activity is demonstrated only by the entire spectrum of spinal-fluid tests, among which increased cell counts and total protein determinations are of chief importance. Colloidal reactions are important but less informative than cell counts and protein determinations.

"3. In treated cases, spinal-fluid Wassermann tests and colloidal reactions may continue positive for more than five years after treatment has successfully arrested the syphilitic process. In an arrested case, cell counts should become normal within three to four months after treatment, and quantitative complement-fixation tests, protein values, and colloidal reactions should show a gradual but steady trend toward normal.

"4. Following malaria therapy or penicillin therapy of active neurosyphilis, the spinal-fluid findings may show a trend toward normal values, only to relapse later. Relapses however, rarely occur more than one year after therapy, and at Bellevue Hospital we have never observed a relapse of neurosyphilis more than fifteen months after treatment. If the cell count is not normal and there is no definite improvement in the other spinal-fluid findings six months after treatment, further treatment is imperative, regardless of the clinical status of the patient."

Few rules for the treatment of syphilis are without exception, and at the clinic we have seen but few exceptions to those which have been mentioned. We, therefore, feel, as do most investigators, that the concept of Thomas is valid. Since we have seen cell counts which were abnormal six months or more following treatment become normal without further treatment, we do not feel necessarily that further treatment is imperative, and we also have seen neurosyphilis relapse more than fifteen months after treatment with penicillin or malaria, or both.

The treatment of active neurosyphilis is now relatively simple, inexpensive and nontoxic. It consists almost without exception of the administration of penicillin. A few years ago, many of us thought that penicillin combined with malarial therapy was the treatment of choice, but it now appears that penicillin alone will accomplish as much. There are many schedules for the administration of penicillin. However, most authors[2] believe that a total dose of at least 6,000,000 units given over a period of at least ten days is adequate therapy at least for a first course. There are many variations of this schedule, for example, 600,000 units of penicillin may be administered daily for ten days, 300,000 units may be administered daily for twenty days, or 600,000 units of penicillin with 2 per cent aluminum monostearate may be administered daily, every other day, twice a week, or even less frequently.

If a test for syphilis is performed on the serum, the result of the test is of no value in determining the response of a neurosyphilitic patient to therapy. As indicated previously, the cerebrospinal fluid should be examined four to six months after the completion of the course of treatment. If the increased cell count has reverted to normal or nearly normal, if the value for the protein has decreased, and if the patient shows evidence of improvement, further treatment is not necessary. At the end of four to six months, the result of the complement-fixation reaction usually is less strongly positive than it was previously, and there may be only a slight change in the result of the colloidal gold test. Although there may be little change in the results of these tests at this time, further treatment may not be necessary. If, however, the cell count and the value for the protein remain high, the patient should receive another course of treatment with penicillin. This course should be the same as, or more intensive than the previous one.

In cases in which the response is favorable, the cerebrospinal fluid should be examined at intervals of four to six months during the first year after treatment, and then yearly until examination of the cerebrospinal fluid no longer discloses any abnormality.

It should be noted that absence of clinical evidence of improvement does not indicate that treatment has been ineffective. Irreparable injury of the nervous system may have taken place before treatment was instituted. Hence, the presence of subjective and objective signs may continue in spite of the fact that active syphilis no longer exists. On the other hand, there may be considerable clinical improvement in spite of a continuing active syphilitic process. This explains the necessity for repeated examination and continued observation of neurosyphilitic patients.

Fortunately, a patient only rarely needs further treatment after he has received two courses of treatment with penicillin. If further treatment is necessary, one should consider the advisability of using fever therapy, especially malarial therapy, or of administering one of the other antibiotics such as aureomycin.

In certain cases in which the patients are highly susceptible to penicillin, serum sickness, urticaria, eczematous eruptions and even exfoliative dermatitis may develop. In cases in which the history reveals that patients are highly susceptible to the administration of penicillin, and in cases in which its administration is followed by a reaction, one of the hypoallergenic preparations of penicillin may be used or one of the other antibiotics may be administered orally.

At the clinic, we have treated a considerable number of neurosyphilitic patients by administering aureomycin orally, and they have responded satisfactorily and to the same degree as other patients who have been treated with penicillin.[12] Other antibiotics such as terramycin and chloramphenicol also have merit, although chloramphenicol has been shown to produce hematopoietic suppression.

We have been able to continue observation on all but two of the patients who were given aureomycin and on whom we reported results previously.[9] In all of these cases, there has been a continued and rapid improvement in the condition of the cerebrospinal fluid. In one case in which a relapse occurred a second course of treatment with aureomycin produced satisfactory progress.

Clinical improvement noted early after treatment with aureomycin has continued although less rapidly. The greatest degree of clinical benefit appeared within the first six to ten months after treatment was begun. In no case of asymptomatic neurosyphilis has symptomatic neurosyphilis developed. All patients with symptomatic neurosyphilis with but one exception have shown moderate to marked degrees of clinical benefit in their specific syphilitic symptoms. In addition, there have been the general tonic effects noted as well in penicillin-treated patients; that of gain of weight and an increased sense of well-being.

While the dosage of aureomycin has varied considerably, it appears that approximately 60 gm. of aureomycin, with 2 to 4 gm. given daily in divided doses, is sufficient for a single or first course of therapy.

In cases in which the administration of aureomycin caused nausea, anorexia, and other gastrointestinal symptoms, a reduction of the daily dose often permitted continuation of the medication with comfort. Photosensitivity occurred in two cases.

From these further observations, we have concluded: (1) that results of aureomycin therapy of neurosyphilis are equivalent to those achieved with penicillin, and (2) that aureomycin is available for those cases of neurosyphilis in which the patients are hypersensitive to penicillin or the disease is resistant to this antibiotic.

Although a partial answer to the fundamental question, "What does the treatment of neurosyphilis accomplish?" is contained in much of the foregoing, this question cannot be answered completely. It seems safe to say that present-day methods of therapy of asymptomatic neurosyphilis will almost completely prevent the development of symptomatic neurosyphilis. In this respect, results may be considered almost 100 per cent satisfactory. Hence, the imperative need for the prompt suspicion and evaluation of any type of neurosyphilis.

The results of treatment of symptomatic neurosyphilis and the prognosis of the patient with this disease cannot be foretold in any individual case. These depend on the type of neurosyphilis present, the results of examination of the cerebrospinal fluid, and above all, on the amount of irreversible organic damage produced before antisyphilitic therapy is begun.

Dattner and associates[4,5] reported the results of treatment with penicillin in 388 cases of neurosyphilis. Only three of the 388 patients failed to exhibit evidence of improvement after they had received repeated courses of treatment with penicillin. Peculiarly, all of these three patients had asymptomatic neurosyphilis. In cases in which repeated courses of treatment with penicillin fail to produce evidence of improvement, another antibiotic should be administered or fever therapy should be employed.

Administration of penicillin alone or in conjunction with malarial therapy failed to produce clinical evidence of improvement in only twenty-two (6 per cent) of 380 cases reported by Curtis, Kruse and Norton. These authors said that patients who have neurosyphilis including paresis respond equally well to the administration of penicillin alone or in conjunction with malarial therapy. This opinion agrees with that of several other authors.[7,10,11] Controversy still exists, however, regarding the relative merits of penicillin when administered alone and in conjunction with fever therapy. Epstein and Allen expressed the opinion that its administration in conjunction with fever therapy produces better results.

Johnwick has demonstrated that the results obtained by the administration of mapharsen (oxyphenarsine hydrochloride) and bismuth subsalicylate in combination are no better than the results obtained by the administration of penicillin alone.

Persons who are particularly interested in this subject should read the detailed review by Beerman, Ford, Nicholas, and Katzenstein.

Conclusions

Although the results of treatment of symptomatic neurosyphilis cannot be stated dogmatically, the following conclusions appear to be warranted:

1. Administration of penicillin is the treatment of choice.

2. Fever therapy may be administered in conjunction with penicillin in certain cases, particularly in cases in which optic atrophy or severe paresis is present.

3. Other antibiotics may be used in unusual cases in which the disease does not respond to the administration of penicillin.

4. The present method of treating neurosyphilis with antibiotics is cheaper, safer, more rapid, less toxic and more effective than the older methods.

References

1. Beerman, Herman; Ford, W. T.; Nicholas, Leslie, and Katzenstein, Lawrence: Syphilis: A review of the recent literature. Arch. Int. Med., 89:464-519 (Mar.) 1952.
2. Curtis, A. C.; Kitchen, D. K.; O'Leary, P. A.; Rattner, Herbert; Rein, C. R.; Schoch, A. G.; Shaffer, L. W., and Wile, U. J.: Penicillin treatment of syphilis. J.A.M.A., 145:1223-1226 (Apr. 21) 1951.

(Continued on Page 246)

PUBLIC HEALTH SERVICE IN MINNESOTA

CHARLES G. SHEPPARD, M.D.
Hutchinson, Minnesota

FIRST of all, I should like to welcome all of you who are here tonight at our sixth annual meeting. I am sure that all of you who attended this afternoon's session, on care of the aged, have benefited greatly. The problems that lie before us in this and other public health fields are extremely challenging, and deserve our best efforts.

Secondly, I should like to take this opportunity to thank all those members of the various committees of the conference for their efforts during this past year. The growth of our organization has been slow but steady, indicating that the foundation is on firm ground. Our programs have been sufficiently varied and timely to attract the interest of those engaged in public health work, should they take the time to study the program and attend the sessions offered them. I am encouraged by the entrance into our conference of people in so many allied fields of public health work.

Last year's president, Dr. Viktor Wilson of Rochester, Minnesota, put the question, "Where do we go from here in relation to public health in Minnesota?" Dr. Wilson very fully reviewed the situation as it exists in Minnesota at the present time, and gave special emphasis to the full time public health services in Minnesota as they now are, and as he would like to see them expand in the future.

It is recognized that public health services in Minnesota are not adequate. A partial correction has been offered by an enabling act which will allow the levying of a tax to provide for local public health services in city-county, or multi-county units. The amount provided for under this law is not sufficient to provide the services that we would like to see developed.

What are some of the things that can be done to improve public health service? Bring about a change in the law to allow for more adequate financing by governmental agencies that desire such public health units to be developed. Create a greater interest in public health problems in Minnesota. This must be done by constant education of the public to the point where they are willing to expend funds for this purpose.

Who are those who are doing the educating at the present time? Public health nurses, doctors who serve as full or part time health officers, dentists, veterinarians, and groups of interested lay people. Public health activities are better directed in any community by someone who has a knowledge of public health. A great deal could be done by an interested health officer. Many of our health officers are not interested as is attested to by the fact that so few of them attend these Minnesota Public Health Conferences, either to learn or to contribute something in the promotion of better community health.

Doctors must be community leaders and each group of physicians in a community should be given the opportunity of suggesting to their city council the name of one of their group who expresses the greatest interest in public health matters as the one they would like to see as health officer. This individual should then be reappointed in this capacity year after year as long as he desires to do the work, and as long as his job is done well.

There are a great many communities that have only one doctor in the community and of necessity he must be the medical health officer. If the doctor does not happen to have an interest in public health matters, the community will suffer accordingly.

In Minnesota there are 137 communities with one doctor only. If the community is fortunate enough to have that man interested in public health, his services will be relatively good even on a part time basis. If he has no interest in public health nothing will be done. There are eighty communities where there are two doctors, and the chances are that one of them will have a greater interest in public health than the other and thus should be allowed to be the health officer as long as he will serve. There are 158 communities of three or more doctors, and there again the suggestion would be in order to let the doctors select their own health officer from their own group and let him serve year after year, to more

---

Presidential address before the Minnesota Public Health Conference, Saint Paul, Minnesota, October 2, 1952.

adequately assure continually improving public health services.

Many communities to my knowledge rotate the health officer position amongst all the physicians in that community, having each man hold office for a year. He may have no interest in the work and do nothing, or a great deal of interest and have insufficient tenure of office to accomplish improvements that he may plan. One cannot do a great deal in a one year term as a part time health officer, as I know from personal experience with these problems.

It will be years before the public is educated to the point of demanding local health units, as outlined by Dr. Haven Emerson. This is the ultimate goal, but in the meantime something else must be done.

I propose that this conference, working with such organizations as the Minnesota League of Municipalities and the Minnesota State Medical Association, promote the idea to city and village governing bodies of more careful selection of health officers and longer tenure of office as a step toward improvement of community health.

There would be much greater education in public health in each community and consequently a demonstration of the need for more adequate public health services. I would also like to suggest to the new president of the public health conference that a legislative committee be appointed to try to bring about the necessary change in the permissive legislation which was passed two years ago to establish local full time health units in Minnesota. I think if this committee could work in conjunction with a similar committee in the Minnesota Medical Association such change might be brought about in this coming legislature. This would logically be a part of the work of the already appointed committee on local public health services.

I should like to suggest the appointment of a committee of health officers to work with the executive officers of the League of Municipalities in order to try to bring about such a change in the method of appointing health officers in our communities.

I should also like to report briefly on the recent hearing held in Minneapolis, in the auditorium of the North American Life and Casualty Company. This was a hearing on the Health Needs of the Nation conducted by two members of a commission appointed by President Truman. Members of this commission who were present at the hearing were Miss Marian Sheahan of New York, and Dr. Dean Clark, of Boston, Mass. Some of you were present at this hearing, and testified for your particular group. I do not know what your impressions of this hearing were, but I should like to give you my own. I question the need of having such a commission, and the commission was given much too short a time in which to perform its function.

The commission members gave each group too little time in which to prepare a statement which would adequately tell of health needs in the various states in this section, to say nothing of time to develop suggestions for improvements in the health of our people. Each individual who testified for his organization was given exactly ten minutes in which to speak, and there were altogether too many who testified in that one day to be very constructive. A great many groups were represented at this meeting. There were spokesmen for certain farm organizations, certain labor unions, co-operative health organizations as well as the various professions associated with the practice of medicine. Representatives of many large groups, such as the Farm Bureau, refused to testify, feeling that the necessary information was already available.

Most of these groups were given exactly eight to ten days in which to prepare a statement to be given at this hearing. Certainly on a subject as important and with as many ramifications as the Health Needs of the Nation, ten days was a very inadequate period of time to come up with anything really constructive in the way of suggested improvements to say nothing of a mere description of what our health needs actually are. I think, too, that the hearing came at a most unfortunate time, that is, during a political campaign. My own impression was that not too much in the way of constructive suggestions were made, and that the possible lack of such constructive suggestions might be used politically to the disadvantage of those engaged in dealing in public health services in the country. I believe that because of the inadequacy of the testimony it will be pointed out that nobody is doing anything about real public health improvements in this country with the idea of promoting the socialization of medicine. In other words these hearings will show to those who are conducting them that there is a great need for expansion of the federal hand into health affairs in this country, because it may be pointed out that we have made few constructive suggestions as to how to solve these problems. It is definitely my feeling that if this commission had been given more time and the hearing had been conducted in a different manner and at a different time that something other than more ammunition for the socializers might have come out of it. The known socialist ideals of some of those conducting the hearings probably means that their conclusions were drawn before the hearings were held.

I believe with Dr. Roger Kennedy, president of the Minnesota State Medical Association, who said at his appearance before the sectional meeting of The President's Commission on Health Needs of the Nation held in Minneapolis in September:

> "There is really no situation existing in the health of the nation today that warrants this type of survey—especially one which is conceived in such a rapid and haphazard manner, and through which one cannot possibly hope to acquire an accurate picture of possible existing health needs, meager as they have been proved to be."
>
> "We believe that the health needs of the nation are not overwhelming, that they are being solved by the continued efforts of men of medicine and related fields who are free to practice and work without interference and control, that future problems in this field will be solved most completely and most satisfactorily through medical practice which remains free to continue its earnest quest for even better health for all people."

I believe that it behooves any organization which deals with private or public health to do its utmost to prevent the inroads of federal controls upon the health of our people, and accordingly have presented a resolution which was passed at this afternoon's business session. I sincerely hope that this organization, and all others like it in this country, will continue to oppose the ever increasing socialistic trend in our time, to the end that we here in Minnesota as in all other states, may study our own health needs and solve our own problems. There have been times where federal assistance and advice were necessary, and this will undoubtedly continue, but let us use our own ingenuity and resources whenever possible in an effort to stem the mounting tide of federal paternalism.

NEUROSYPHILIS

(Continued from Page 243)

3. Curtis, A. C.; Kruse, W. T., and Norton, Dorothy H.: Neurosyphilis. III. Evaluation after three years of treatment with penicillin alone and with a combination of penicillin and malaria. Am. J. Syph. Gonor. & Ven. Dis., 33:527-536 (Nov.) 1949; Neurosyphilis. IV. Posttreatment evaluation four to five years following penicillin and penicillin plus malaria. Am. J. Syph. Gonor. & Ven. Dis., 34:554-565 (Nov.) 1950.
4. Dattner, Bernhard: Penicillin failures in neurosyphilis. Am. J. Syph. Gonor. & Ven. Dis., 33:571-575 (Nov.) 1949.
5. Dattner, Bernhard; Thomas, E. W., and de Mello, Lopo: Results of penicillin therapy for neurosyphilis at Bellevue Hospital. J. Ven. Dis. Inform., 32:33-39 (Feb.) 1951.
6. Epstein, N. N., and Allen, J. R.: Treatment of neurosyphilis with penicillin combined with artificial fever therapy. II. Further observations. Arch. Dermat. & Syph., 63:419-425 (Apr.) 1951.
7. Hahn, R. D.; Lewis, B. I.; Richter, H. W., and Cross, E. S., Jr.: The treatment of neurosyphilis with penicillin and with penicillin plus malaria. Am. J. Syph. Gonor. & Ven. Dis., 35:433-470 (Sept.) 1951.
8. Johnwick, E. B.: The treatment of neurosyphilis: penicillin alone versus penicillin plus arsenic and bismuth. J. Ven. Dis. Inform., 31:303-307 (Dec.) 1950.
9. Kierland, R. R., and O'Leary, P. A.: Oral treatment of neurosyphilis with aureomycin: progress report. Am. J. Syph. Gonor. & Ven. Dis., 35:544-552 (Nov.) 1951.
10. Perlo, V. P.; Rose, A. S.; Carmen, Lida R. C., and Solomon, H. C.: The treatment of neurosyphilis—one-to-six-year follow-up of patients treated with penicillin at the Boston psychopathic hospital: comparison of results with penicillin alone and combined penicillin-malaria therapy. Am. J. Syph. Gonor. & Ven. Dis., 35:559-567 (Nov.) 1951.
11. Stokes, J. H.; Falk, M. S., and Gammon, G. D.: Effect of five years of penicillin alone on neurosyphilis: including some comparisons with prepenicillin methods. Am. J. Syph. Gonor. & Ven. Dis., 33:537-560 (Nov.) 1949.
12. Thomas, E. W.: Syphilis: its course and management. P. 239. New York: Macmillan Co., 1949.

MANAGEMENT OF PATIENTS WITH TRAUMA OF THE CHEST

NATHAN K. JENSEN, M.D.

Minneapolis, Minnesota

PHYSIOLOGICAL considerations have led to the division of chest injuries into penetrating and non-penetrating, depending upon whether the parietal pleura has been disrupted by an object traversing the full thickness of the chest wall. Penetrating wounds are further subdivided into open and closed types. Open penetrating wounds result in a vicarious airway through the chest wall into the pleural space and the production of a sucking wound. Closed penetrations do not cause sufficient defect in the chest wall to produce sucking wounds but are frequently followed by pneumothorax and hemothorax, the blood most often coming from the chest wall and the air from a rupture of the lung.

Non-penetrating chest injuries vary in severity from superficial abrasions to massive crushing injuries causing instant death from rupture of the heart or great vessels. In many, although the skin has not been disrupted, sharp rib fragments have traversed the parietal pleura and lacerated the lung, and we have the same hazards of hemothorax and pneumothorax as beset closed penetrations. One great difference between penetrating and non-penetrating thoracic injuries is the hazard of bacterial contamination associated with the penetrating wounds. Modern antibiotics have significantly diminished this distinction, and empyema is no longer greatly feared in open thoracic wounds.

Many of the other formerly hazardous complications of thoracic injury have become easily managed problems with our better understanding of their physiological facets and the ease and safety of modern thoracotomy. Pneumothorax is quickly and easily handled by inserting a catheter through an interspace and sucking out the intrapleural air by motor suction of sufficient volume to stay ahead of the leak in the lung and thus re-establish negative intrapleural pressure. Re-expansion of the lung will bring the leaking visceral tear into contact with the parietal pleura and its adherence here promptly seals it off.

Hemothorax is best aspirated early and should be aspirated completely and as soon as possible before clotting can occur. The old fear of reactivation of bleeding by re-expansion of the lung is unfounded as a lacerated lung is seldom the cause of extensive hemothorax, and where it is, once the bleeding has stopped, it will remain so due to the low pulmonary blood pressure. Persistent bleeding is from torn systemic arteries, usually the intercostals, and may require thoracotomy and ligation. Clotted hemothoraces are easily evacuated by thoracotomy, and decortication of the lung allows its re-expansion.

Severe crushing injuries of the chest, however, present problems not so readily solved. The disruption of the structural stability of the thoracic cage by multiple rib fractures often makes adequate pulmonary ventilation impossible. Contusion of the lung adds further difficulties, and cardiac contusion may result in serious arrhythmias. An understanding of the nature of the physiological disturbances associated with crushing injuries points the way, however, to their successful management.

Acute pulmonary edema of some degree occurs in these injuries. Even though no ribs are fractured, as may occur in a young person with flexible ribs, severe contusion will produce almost immediate massive pulmonary edema. The exact mechanism of this phenomenon is unknown, but it is probably related to anoxia and the resultant pulmonary hypertension. Drinker has shown that the easiest and quickest way to produce pulmonary edema in dogs is by anoxia, and recently Cournand has demonstrated that anoxia results in significant increase in pulmonary blood pressure in normal adult males. Dr. Newell Wood, working at the Minneapolis Veterans Hospital, has demonstrated a marked reduction in oxygen absorption by the lung on the side of a single rib fracture even though its ventilation remains normal. Apparently as a result of even minor chest injury perfusion of the lung is reduced with concomitant diminished gaseous exchange; anoxia and hypercarbia follow with pulmonary hypertension and edema.

Read at the annual meeting of the Minnesota State Medical Association, Minneapolis, Minnesota, May 26, 1952.

The treatment of traumatic wet lung is adequate oxygenation. If normal ventilation is possible, oxygen alone will suffice. If pain is immobilizing the chest, its relief by local procaine block may be required. Frequently the serous exudation into the lungs will be so great that tracheobronchial catheter aspiration will be necessary before adequate airway can be re-established, and coughing must be stimulated to continue the airway toilet.

Crushing injuries producing a flail chest wall present a more difficult problem. In addition to the wet lung, we now have a chest wall that sucks in on inspiration and bulges out on expiration and so is said to be moving paradoxically. The patient now sucks his chest wall in and out of the thoracic cage rather than air in and out of his lungs. Tidal air is sharply reduced and coughing is impossible. Traumatic wet lung is also present, and pleural complications of hemothorax or pneumothorax may be expected. If the pulmonary injury is severe, hemorrhage into the lung with loss of alveolar tissue to respiration and bronchial obstruction by clots further impedes ventilation. This patient may be salvaged by stabilization of the chest wall and the re-establishment of adequate ventilation. If the chest wall injury is not too extensive, is unilateral, and the contralateral lung is uninjured, firm circumferential strapping will stop the paradoxical motion, allow effective diaphragmatic ventilation, and permit good coughing. Pleural complications must be effectively handled and the compressed lung fully re-expanded. A clear airway must be promptly obtained either by effective coughing or catheter aspiration of the tracheobronchial tree and this maintained.

Extensive unilateral crushing injuries of the chest and bilateral injuries cannot be stabilized by strapping. We have tried lateral traction attached to multiple ribs and discarded it. Tracheotomy with oxygen delivered under slight positive pressure during all phases of respiration will stabilize these chests. This accomplishes two things. The tracheotomy reduces the dead air space of the nose, mouth, and pharynx and allows better alveolar ventilation. Positive pressure oxygen delivered through this tracheotomy tube during expiration washes out the alveolar air delivered into the airway above the tracheotomy tube and, thus, completely eliminates this as dead air space, and oxygen delivered through the tube at positive pressure during inspiration prevents the intrathoracic pressure from falling below atmospheric pressure during inspiration.

The lungs and thorax, having inherent elasticity, can be ventilated very well, just the same as a balloon, without the help of a single rib if the air need not be sucked in, or, in other words, if intrathoracic pressure need not fall below atmospheric pressure for air to enter the lungs.

The tracheotomy also provides an easily available port for aspiration of the tracheobronchial tree, and since it makes high intrapulmonary gas pressures impossible, as in straining or coughing, it hastens the closure of air leaks from tears in the lung. Because of this a tracheotomy will promptly control a spreading subcutaneous or mediastinal emphysema.

Occasionally, multiple anterior bilateral rib fractures or costochondral separations will leave the sternum floating. It then sucks in on inspiration and bulges forward on expiration. This is easily stabilized by traction. A Parham band may be placed beneath it and attached to pulley-weight overhead traction of about 4 pounds for an adult, or it may be grasped by tongs and traction applied. Towel clips inserted into the cartilages are painful.

The aim in every chest injury is the prompt re-establishment of adequate ventilation. Oxygen is essential to support life till this is accomplished, but a patient must also eliminate carbon dioxide, and if dyspneic or hyperpneic though pink, exchange is inadequate and respiratory acidosis is present. Quiet respiration on room air with good color and effective cough is the goal.

SUPPLEMENT TO MOTION PICTURE REVIEWS AVAILABLE

The Committee on Medical Motion Pictures of the AMA has completed the fourth supplement to the booklet entitled "Reviews of Medical Motion Pictures." It contains all the film reviews published in *The Journal* from January to December, 1952.

One copy has been mailed to the secretary of each state medical society. Copies are available to county medical societies on request from: Committee on Medical Motion Pictures, American Medical Association, 535 North Dearborn Street, Chicago 10.

CHRONIC PHARYNGEAL AND LARYNGEAL HISTOPLASMOSIS SUCCESSFULLY TREATED WITH ETHYL VANILLATE

A Case Report

HORACE H. ZINNEMAN, M.D., and WENDELL H. HALL, M.D.
Minneapolis, Minnesota

ONLY eighteen probable or proved cases of histoplasmosis, originating in Minnesota, have been reported to the Minnesota Department of Health since 1926. Six of these cases were reported in 1950 in MINNESOTA MEDICINE as an unusual type of pulmonary disease involving six members of a family at Detroit Lakes.[22] Subsequently, all of the six were found to have histoplasmin skin sensitivity as well as serum complement-fixing antibody. Moreover, *Histoplasma capsulatum* was cultured from the dust of the basement of their home.*

The present report deals with a case of histoplasmosis which appears notable because of its chronicity, the histologic proof of the diagnosis and the successful therapy with ethyl vanillate.

Case Report

A forty-two-year-old white machine operator noted the gradual onset of hoarseness in the spring of 1950. Local therapy with tincture of iodine was of no avail, and by September, 1950, he became increasingly short of breath. A choking spell necessitated an emergency tracheotomy. Following the operation, his voice began to improve and was almost normal by the spring of 1951. Very gradually he again became hoarse and by February, 1952, his voice had diminished to a whisper. He also noted intermittent episodes of fever. He lost 25 pounds of weight and encountered considerable difficulty in swallowing because of soreness of his throat. He had lived in or around Duluth, Minnesota, all his life except during World War II. From 1943 to 1944 he saw action as a soldier in North Africa and Italy. His past history was otherwise irrelevant.

The patient was afebrile, alert, but poorly nourished, weighing 128 pounds, and unable to speak above a whisper. Externally the head and neck showed nothing of note. There was generalized swelling and reddening of the mucosa of the hard palate, maxillary gingiva, tonsillar pillars, uvula and the posterior pharyngeal wall. The mucosa was granular in appearance and of spongy consistency. There was no ulceration. Similar lesions also were noted in the larynx; the vocal cords were greatly swollen, granular and covered with a dirty grey exudate. The heart and lungs were not remarkable; the blood pressure was 95/70 mm. Hg. The liver, spleen and kidneys could not be palpated. The rectal examination was negative. There were no skin lesions.

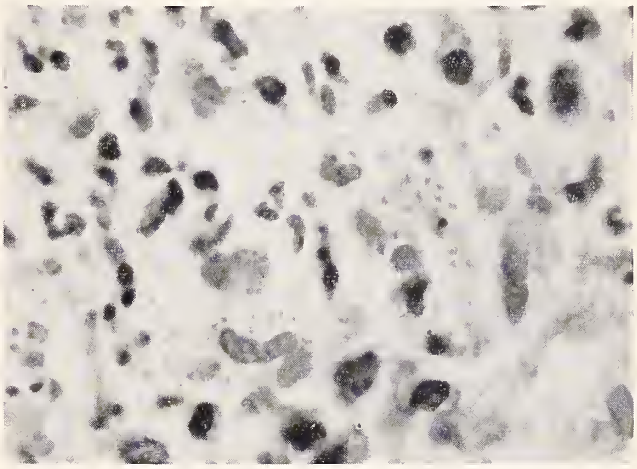


Fig. 1. Biopsy specimen from the hard palate stained with hematoxylin-eosin, showing submucous tissue filled with chronic inflammatory cells and including several macrophages with intracytoplasmatic yeast cells having a distinct clear capsule. Microphotograph, magnification ×396.5.

Laboratory Data.—The initial urine was not remarkable. The hemoglobin was 14.1 gm./100 cc., and the leukocyte count was 4000/c.mm. with 58 per cent neutrophils, 34 per cent lymphocytes, 3 per cent monocytes, 3 per cent eosinophils and 2 per cent basophils. The erythrocyte sedimentation rate was 38 mm./hr. The total proteins measured 8.1 gm./100 cc. with an albumin fraction of 3.1 gm. and globulin 5.0 gm. The globulin fraction was composed of alpha globulins 1.5 gm., beta globulins 1.4 gm. and gamma globulins 2.1 gm./100 cc. Liver and kidney function tests were normal. Sputum cultures were negative for acid-fast organisms and fungi. The spinal fluid was normal. A sternal bone marrow biopsy presented one isolated nonspecific granuloma. Two of four biopsies of the mucous membrane of the palate and pharynx revealed the characteristic histologic picture of histoplasmosis (Fig. 1). The lesions showed masses of chronic inflammatory cells with occasional giant cells of the Langhans type. A few foci of macrophages with many intracytoplasmatic capsulated yeast cells, presenting a double-contoured capsule, were seen immediately beneath the epithelium.** The

---

From the Veterans Administration Hospital, Minneapolis, Minnesota, and the Department of Medicine, University of Minnesota Medical School.

Reviewed by the Veterans Administration and published with the approval of the Chief Medical Director. The statements and conclusions published by the authors are the result of their own study and do not necessarily reflect the opinion or policy of the Veterans Administration.

*Information obtained from Dr. C. B. Nelson, Minnesota Department of Health, Minneapolis.

**Histologic diagnosis and description by Drs. E. T. Bell and D. F. Gleason.

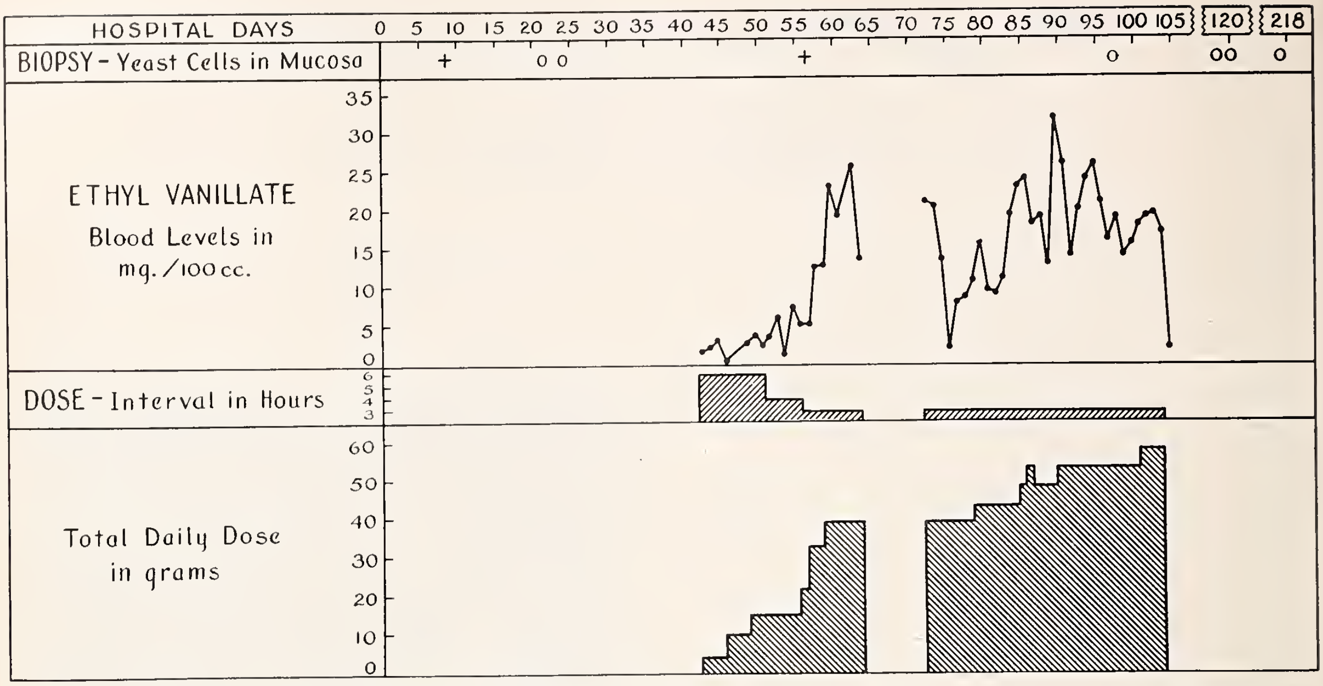


Fig. 2. Results of mucosal biopsies and treatment with ethyl vanillate in a patient with chronic pharyngeal and laryngeal histoplasmosis.

biopsy material was too limited to permit further staining procedures. Attempts to isolate the yeast from the biopsy material by culture and inoculation into mice and guinea pigs were unsuccessful. Radiologic examinations of the chest and the gastrointestinal tract were entirely normal. Proctoscopy was negative.

Hospital Course and Treatment.—Oral therapy with ethyl vanillate† was begun on April 16, 1952, using gelatin capsules containing 0.6 gm. of the drug. Satisfactory blood levels were obtained when the drug was administered every three hours. Adequate levels (20 to 30 mg./100 cc.) were obtained when the dose amounted to 4.8 to 6.6 gm. every 3 hours. It was not possible to maintain the blood concentration at a constant level (Fig. 2).

There were few side effects from the drug. Gastric and pharyngeal irritation was minimal in spite of the large dose. There was a temporary but mild reduction in the excretion of phenolsulfonphthalein. At therapeutic doses a copper-reducing substance appeared in the urine. The latter was not fermented by yeast and the blood sugar remained within normal limits. Of the liver function tests, only the thymol turbidity test became elevated (22 units) during therapy, and later it returned to normal.

The granulomatous papular lesions had almost disappeared by May 15. The mucous membranes of the hard palate remained somewhat spongy. The patient still spoke in a whisper, but was able to swallow normally and eat a general diet. Interruption of therapy from May 6 to May 15 was necessitated by temporary exhaustion of our supply of ethyl vanillate.

At the end of therapy the erythema and the granular lesions, as well as most of the gingival sponginess, had disappeared. Biopsies from the hard palate, the vocal cords and the pillars, taken on June 9, August 1 and November 6, 1952, contained chronic inflammatory granulomatous tissue without evidence of yeast cells and from which no yeast growth could be obtained by culture or mouse inoculations. The larynx was of normal dimensions and color; however, the vocal cords presented extensive scarring.

The patient was seen on follow-up examinations in August and November of 1952 and no further lesions were noted. He still had a hoarse voice. All laboratory tests were normal. The patient had been working, had gained six pounds in weight and had not experienced any febrile episodes..

Comment

The first two cases of histoplasmosis were described by Darling[6,7,8] in 1905 and 1906. Since it was believed to be a tropical disease, histoplasmosis escaped detection elsewhere until 1926, when Watson and Riley[24] described the disease in a fifty-two-year-old woman who had spent most of her life in Minnesota and never had been in tropical or subtropical regions. As with Darling's patients, she had an irregular fever, leukopenia, hepatomegaly and an unresolving bronchopneumonia ending fatally.

Watson's report transferred the interest in histoplasmosis from the tropics to the North American continent; in 1934 Dodd and Tompkins[11] reported the first case diagnosed *ante mortem.* The material from that case was studied culturally by deMonbreun,[9] who identified the causative agent, *H. capsulatum,* and demonstrated its life cycle as a yeast with mycelial stages. Darling had thought the organism to be protozoan.

---

†Generously supplied by Dr. Harvey Blank, E. R. Squibb & Sons, New York, New York.

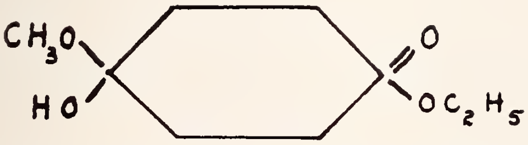


Fig. 3. Chemical structure of ethyl vanillate.

The natural reservoirs of *H. capsulatum* are the soil,[13,17] dogs,[10] wild rats, skunks, opossums and cats. In general, animals seem to recover from the infection. A systematic survey of dogs in Minnesota for histoplasmosis has not been undertaken. To our knowledge only one dog in Minneapolis is known to have died of the disease.

Among human beings in Minnesota the incidence is relatively low. Only 4.7 per cent of 971 student nurses in a Minneapolis survey were positive histoplasmin reactors, as compared to 13.8 per cent in Detroit, Michigan, 11.8 per cent in Philadelphia, Pennsylvania, 50.2 per cent in Kansas City, Kansas, and 61.5 per cent in Kansas City, Missouri.[20] Recent extensive studies have established the Mississippi valley and the western slopes of the Appalachians as the most important areas for human infection. There the majority of children (up to 83 per cent) were found to have pulmonary calcifications, previously thought to be tuberculous. Yet less than 50 per cent of these children had a positive tuberculin skin test. After the introduction of the histoplasmin skin test, they were found to be positive histoplasmin reactors.

Until recently human histoplasmosis was thought to be always a widely disseminated and fatal infection. Present evidence indicates that this is not true. Kunstadter,[19] Bunnell and Furcolow,[1] Stuart et al,[23] Curtis and Grekin,[5] Friedman et al,[14] Furcolow[15,16] and Christie[2] have characterized the disease as usually a benign, self-limited pulmonary infection, often ending in multiple, nodular calcifications in the lung. Christie[3] and others have also described intermediate, chronic infections which, like the present case, often are localized in the pharynx and larynx.

H. capsulatum may invade any tissue of the body. With disseminated infections the organs are involved in the following order of frequency: lymph nodes, lungs, adrenals, gastrointestinal tract, bone marrow, skin, mouth and larynx, pancreas and kidneys.[21] The frequency of adrenal involvement is noteworthy. At autopsy the greatly enlarged adrenal glands, which for the major part consist of necrotic tissue, frequently show no parasites. Destruction of the adrenal glands has been a frequent cause of death; indeed, any case of Addison's disease of unexplained etiology should be evaluated for histoplasmosis.

Histologically, the typical lesion consists of granulomatous tissue, containing numerous macrophages and giant cells. The intracellular parasite may be missed unless the histologic sections are studied under oil immersion. From one to thirty yeast cells may be seen in a single phagocyte. They measure 1 to 3 μ in diameter and characteristically have a double refractive capsule. Although the parasite can be seen in hematoxylin-eosin stains, it is better demonstrated with Giemsa or periodic acid stains.[2]

Infection with *H. capsulatum* may be acute or chronic and may be seen in any one of the following three forms: (1) Progressive, active histoplasmosis. (2) Asymptomatic benign infection, healing spontaneously. (3) Histoplasmin sensitivity of the skin, without demonstrable lesion.

Clinical signs and symptoms may present themselves in any combination of the following: irregular fever, anorexia, nausea, anemia, leukopenia (leukopenia with splenomegaly is typical and often simulates aleukemic leukemia); pulmonary infiltrates, occasionally with cavitation; hepatomegaly, splenomegaly, generalized lymphadenopathy; ulcerations of the skin or mucous membranes, particularly the oropharynx; chronic diarrhea, simulating ulcerative colitis; and Addison's disease.

Until recently all therapeutic efforts have been unsuccessful. Within the past two years, however, ethyl vanillate (Fig. 3) has been demonstrated to be an inhibitor of the yeast *in vitro* and *in vivo.*[4,18] The ethyl ester of vanillic acid, a by-product of the manufacture of sulfite pulp, is a colorless crystalline solid with a melting point of 43 degrees C., of cinnamon-like taste, insoluble in water, but soluble in alcohol and propylene glycol, and readily miscible in oils. *In vitro* the yeast form of *H. capsulatum* is inhibited by ethyl vanillate in concentrations of 20 mg./100 cc.

The drug is a local irritant to mucous membranes; toxic doses result in liver and kidney damage. The margin of safety is narrow. Toxic reactions make their abrupt appearance in the human being when blood levels exceed 50 mg./100 cc., and levels between 20 and 30 mg./100 cc. are desirable for successful therapy.[4] The substance is rapidly excreted in the urine and feces. In the present case blood levels varied considerably even when ethyl vanillate was given at three-hour intervals. After one single dose the blood level reached its peak in three hours, then gradually dropped off and became negligible after seven hours. Initial doses should be small and increased gradually until satisfactory blood levels are attained. Therapeutic levels will be reached in adults with a daily dose of about 0.8 gm./kg. Children require almost twice that amount.

Christie and his group[4] stated that after one week's treatment at adequate blood levels the yeast disappears from the tissues, but that longer periods of treatment may be necessary for cure of the disease. Five out of twelve severe cases of the disseminated type of histoplasmosis in their series recovered with ethyl vanillate therapy.

Local therapy of the pharyngeal lesions of histoplasmosis with propamidine has been successful in one case reported by Ellis and his associates.[12] Propamidine is a p.p′-trimethylenedioxy-dibenzamidine, a substance related to stilbamidine, and may prove to be a valuable addition to the therapeutic armamentarium against histoplasmosis. Ellis used 0.1 per cent propamidine in normal saline solution as a local spray and combined it with local applications of 100,000 U. of streptokinase and 25,000 U. of streptodornase in 10 cc. of normal saline.

Summary and Conclusions

A patient with chronic pharyngeal and laryngeal histoplasmosis, apparently originating in northern Minnesota, was treated successfully with ethyl vanillate. A brief review of the general nature of histoplasmosis and its current treatment has been given.

References

1. Bunnell, I. L., and Furcolow, M. L.: A report on ten proven cases of histoplasmosis. Pub. Health Rep., 63:299, 1948.
2. Christie, A.: Histoplasmosis and pulmonary calcification. Ann. New York Acad. Sc., 50:1283, 1950.
3. Christie, A.: Spectrum of human histoplasmosis. Tr. A. Am. Physicians, 64:147, 1951.
4. Christie, A.; Middleton, J. G.; Peterson, C., and McVickor, D. L.: Treatment of disseminated histoplasmosis with ethyl vanillate. Pediatrics, 7:7, 1951.
5. Curtis, A. C., and Grekin, J. M.: Histoplasmosis. J.A.M.A., 134:1217, 1947.
6. Darling, S. T.: A protozoan general infection, producing pseudotubercles in the lungs, and focal necrosis in the liver, spleen and lymph nodes. J.A.M.A., 46:1283, 1906.
7. Darling, S. T.: Notes on histoplasmosis, a fatal disorder, met with in tropical America. Maryland Med. J., 50:125, 1907.
8. Darling, S. T.: Histoplasmosis, a fatal infectious disease, resembling Kala-Azar, found among natives of tropical America. Arch. Int. Med., 2:107, 1908.
9. DeMonbreun, W. A.: The cultivation and cultural characteristics of Darling's *Histoplasma capsulatum*. Am. J. Trop. Med., 14:92, 1934.
10. DeMonbreun, W. A.: The dog as natural host for *Histoplasma capsultaum*. Am. J. Trop. Med. 19:565, 1939.
11. Dodd, K., and Tompkins, E. H.: A case of histoplasmosis of Darling in an infant. Am. J. Trop. Med., 14:127, 1934.
12. Ellis, F. F.; Scott, R. J., and Miller, J. M.: Treatment of progressive disseminated histoplasmosis with ethyl vanillate and propamidine. Antibiotics and Chemotherapy, 2:347, 1952.
13. Emmons, C. W.: Isolation of *Histoplasma capsulatum* from soil. Pub. Health Rep., 64:892, 1949.
14. Friedman, V.; Brown, J. E., and Turner, E. V.: A case of proven systematic histoplasmosis with apparent recovery. Ohio State M. J., 46:44, 1950.
15. Furcolow, M. L.: Development of calcification in pulmonary lesions, associated with sensitivity to histoplasmin. Pub. Health Rep., 64:1363, 1949.
16. Furcolow, M. L.: Further observations on histoplasmosis. Pub. Health Rep., 65:965, 1950.
17. Grayston, J. T.; Loosli, C. G., and Alexander, E. R.: The isolation of *Histoplasma capsulatum* from soil in an unused silo. Science, 114:323, 1951.
18. Hansen, A., and Beene, M. L.: Sensitivity studies *in vitro* with *Histoplasma capsulatum* to various potential therapeutic agents. Proc. Soc. Exper. Biol. & Med., 77:365, 1951.
19. Kunstadter, R. H.; Whitcomb, F. C., and Milzer, A.: Primary histoplasmosis with recovery of *Histoplasma capsulatum* from the blood and bronchial secretions. J. Lab. & Clin. Med., 34:1290, 1949.
20. Palmer, C. E.: Nontuberculous pulmonary calcification and sensitivity to histoplasmin. Pub. Health Rep., 60:513, 1945.
21. Parsons, R. J., and Zarafonetis, C. J. D.: Histoplasmosis in man. Arch. Int. Med., 75:1, 1945.
22. Ruthledge, L. H.: An unusual type of pulmonary disease, involving six members of a family. Minnesota Med., 33:694, 1950.
23. Stuart, B. M.; Gardner, J. W.; LeMone, D. V., and Van Raavenswaay, A. C.: Pulmonary histoplasmosis. J. Missouri M. A., 45:417, 1948.
24. Watson, C. J., and Riley, W. A.: A case of Darling's histoplasmosis, originating in Minnesota. Arch. Path. & Lab. Med., 1:662, 1926.

PREMATURE SURVIVAL

With Emphasis on the Role of the Public Health Nurse

S. S. SCHERLING, M.D.
Minneapolis, Minnesota

ALTHOUGH there has been a continuing decrease in infant mortality during the past quarter of a century, the death of newborns and of infants under one year of age is still considerable. This paper is presented in the belief that a large number of these deaths might be prevented through a well-planned program, combining the skills of the physician, nurses specially trained in care of prematures, and public health nurses.

In the state of Minnesota, with an enviable infant mortality rate of twenty-five per 1,000 live births for the year 1950, there were 1,874 deaths under one year of age. For the same year, over 110,000 infants one year or under died in the United States. Further statistical analysis reveals that from 35 per cent to 50 per cent of infant deaths are due to prematurity and in 1948 over 39,000 deaths were caused by prematurity.

Prematurity ranks first as the cause of death in the first year of life and eighth among the leading causes of death in Minnesota. There are as many deaths in the first year of life as the total for the next thirty-nine years. It is apparent that if infant mortality is to be reduced further, more intensive studies and research on the problems of prematurity will have to be undertaken.

The approach to this serious problem may be taken along two lines: first, preventing premature births; second, providing better medical and nursing care for the premature infant.

Prevention properly belongs in the hands of the obstetrician and the general practitioner. Providing better care is the concern of the physicians and nurses caring for newborns at the hospital, as well as of the public health nurse. It has been said that over two-thirds of the prematures who die could be saved with improved medical and nursing care and proper follow-up.

But first we must dispose of the question repeatedly asked, "Are prematures worth saving?"

If we were to look for the answer in the older literature, the outlook would indeed be gloomy and disheartening. Capper's stated views, based on statistics from Pirquet's Vienna clinic, are even more pessimistic than those of Ylpöe and of Brander, whose work he reviewed. Capper states in an article published in the *American Journal of Diseases of Children* in 1928: "Even more impressive (than the fact that these children have not caught up to full-term children in weight and height by puberty) are the deviations from normal in their physical and mental progress. In brief, the immature infant will become the backward school child, is the potential future psychopathic or neuropathic patient and even the potential inmate of the home for imbeciles and idiots." It is surprising that these authors would reach such conclusions in face of the known fact that such great men as Isaac Newton, Darwin, Napoleon, Voltaire, and Victor Hugo were small prematures.

Findings of recent studies are more encouraging. Moehr and Bartelme, in a well-controlled study with children from Dr. Hess's group, clearly showed that by four to five years of age no differences could be detected. The gratifying results of an analysis of 317 surviving infants ranging in weight from 605 to 1,280 grams, and in age from one to twenty-six years, was presented by Dr. Julius Hess at the meeting of the American Academy of Pediatrics in Chicago in 1950. Of 313 children whose birth weights were under 1,200 grams, the physical development of 258 was rated as "slight deviation based on expectation for age, as normal, or superior." An estimate of mental development showed 274 as normal and some superior. Only eight were subnormal and seven rated bad. Physically, four were rated as markedly subnormal and twenty-one bad. The actual number of subnormal and bad ratings was not as numerous as it appears, since those with low mental development are also included in the subnormal physical development group.

A similar study to determine what happens to the premature was undertaken by Koenig and associates at the New York Hospital, Cornell

---

Presented at Refresher Course for hospital and public health nurses at Center for Continuation Study, University of Minnesota, November 18, 1952, under auspices of Minnesota Department of Health.

Medical Center. These children were studied at frequent intervals over a period of two to ten years. Not only physical growth, but also speech development, locomotion, self-care, toilet training, school attainment, and social adaptation were measured. It was noted that even in the smallest weight group, average growth was attained, although it was at a later age. Most of the children were not adversely affected by prematurity.

Weighing all the evidence, the logical conclusion is that the small premature is worth saving, and that all measures taken to effect its survival are not only justifiable but mandatory.

However, all articles and surveys on the premature program agree that there is a notable lack of proper instruction given to parents of premature babies. As a result, too often the careful, meticulous, time-consuming effort expended in nursing a premature through the perilous early days in the hospital is nullified when he is discharged at 2,500 grams to an unsuitable home environment, and to parents unable and unprepared to care for so small a baby.

Many fears, misconceptions and undue anxiety of the parents can be dispelled by repeated, detailed instructions, frequent home visits, and conscientious medical supervision. The busy practitioner is too involved and has too little leisure to devote the time needed for such instruction. However, if he desires, he has within easy reach the public health nurse, who is not only able but anxious to perform these much-needed services.

While the baby is still in the hospital, the nurse makes her first visit to the home. At this visit she can instruct the parents in detail and answer many of the questions that trouble them. She surveys the household and if possible arranges for a separate room for the infant. If the house does not lend itself to such an arrangement, she manages to screen off the least used corner of the most suitable room for the baby. She can explain the need to avoid infections by eliminating visitors, frequent washing of the hands, and avoiding unnecessary or too frequent handling of the baby. The nurse advises as to procedure for airing and ventilation of the room while taking measures to protect the infant. Finally, at this visit, she inspects the siblings for evidence of infection. To be effective, this examination must be repeated just before the baby is to be released from the hospital.

Soon thereafter the nurse again makes a home visit. She reassures the family, counsels the parents regarding room temperature and clothing of the infant, and explains the danger of soft bedding. By actual demonstration she points out bathing and feeding techniques and the fundamental details of nipple care, sterilizing bottles, formula preparation, bubbling the baby, and a host of simple techniques with which the average parent is not acquainted. Finally, the trained nurse alerts the parents to observe changes that may be significant and may demand medical attention. She stresses the importance of continued, regular medical examinations, and if necessary arranges for them.

By her sympathetic approach, her sincerity, and her obvious desire to be of help, the nurse gains the confidence of the parents and becomes aware of any nettlesome family problems. With this information, and with the family consent, she is in a position to call upon existing social agencies to help the family solve their difficulties.

But in order to carry out such a program, the doctor as well as the nurse must have training in premature care and an understanding of the handicaps of the premature infant. To meet this obvious need a number of states have established special centers for prematures, under the direction of the health department. In New York City a joint training program for pediatricians and nurses was arranged through the co-operation of the State Department of Health, the U. S. Children's Bureau, and the City Department of Health. Teams of doctors and nurses were trained together, then returned to their respective hospitals to institute a well-planned, properly supervised program for premature babies. Other states have done the same through their state boards of health.

Such a training program established in this state would enhance the survival rate of premature infants. For the present, co-operation between the physician, the health department, and the public health nurse would solve many difficult family problems that parents of premature infants may encounter. Such difficulties as poor housing, tensions, and neglect of other children could be easily solved through team work and co-operative effort of the physician, the public health nurse, and established social agencies.

(Continued on Page 262)

Laboratory Aids to Medical Practice

Sponsored by

The Minnesota Society of Clinical Pathologists

CLINICAL DETERMINATION OF HEMOGLOBIN

FRANK D. MANN, M.D.
Section of Clinical Pathology, Mayo Clinic
Rochester, Minnesota

THE DETERMINATION of hemoglobin is one of the procedures most frequently requested of the clinical laboratory and it is also one whose results are questioned more frequently than almost any other. It would appear appropriate to inquire whether or not the procedures available for the determination of hemoglobin in the clinical laboratory are basically sound.

Virtually all clinical determinations of hemoglobin are performed by some colorimetric method. Most of these techniques involve three basic steps: (1) measurement and dilution of blood; (2) conversion of hemoglobin into some pigment suitable for optical determination and (3) determination of this pigment of hemoglobin. These steps form convenient headings under which the subject may be considered.

The principal source of error in the measurement of blood, aside from faulty performance of the mechanics of pipetting, is inaccuracy of the micropipettes that are used ordinarily. Reports have appeared which indicate that the calibrations of some such pipettes on the market were in error by as much as 30 per cent.[1] These were mainly pipettes manufactured near the end of World War II; pipettes currently available from recognized manufacturers appear to be accurate. The possibility that such inaccuracies might appear again must be borne in mind and guarded against by spot checking of calibrations.

Several different pigments of hemoglobin have been used in clinical determinations. Probably those most commonly employed have been acid hematin and oxyhemoglobin. The wide acceptance that has been accorded methods using acid hematin is difficult to understand, because it has been known since the work of Wu,[5] in 1922, that this substance is greatly affected by plasma. Hence all methods that use acid hematin are subject to large uncontrollable errors except those relatively laborious procedures based on use of washed erythrocytes. Oxyhemoglobin is highly unstable in the dilutions required for hemoglobinometry. The alterations that it undergoes do not result in changes in determined values until one half to one hour after dilution; after this, variations of the order of magnitude of 5 to 10 per cent are common.

Cyanmethemoglobin, on the other hand, is a pigment that remains entirely unchanged in spectral-absorption characteristics for twenty-four hours or more at room temperature. As shown by Sunderman, this pigment can be prepared as readily as acid hematin or oxyhemoglobin simply by dilution of blood with a solution containing 100 mg. of sodium cyanide and 300 mg. of potassium ferricyanide per liter. Because of the dread associated with anything containing cyanide, this solution has been criticized as dangerous. Actually this highly dilute solution of cyanide is less toxic than the Hayem's solution routinely employed as a diluting fluid for erythrocytes; it is just as unlikely to be inadvertently ingested in appreciable quantity. Evaluation of the extensive spectrophotometric measurements of Drabkin, together with the work of Sunderman and of Turner,[4] indicates that cyanmethemoglobin is the pigment of choice for the determination of hemoglobin; the writer has confirmed this in six years of clinical use, involving more than 750,000 determinations.

For the actual optical determination of hemoglobin, photoelectric instruments are widely used, just as they are in the majority of determinations in clinical chemistry. It may be generalized that virtually all commercially available photoelectric filter photometers and spectrophotometers are capable of yielding accurate results when they are properly used. Because the optical systems of most of these instruments permit a considerable amount of stray light, empiric calibration is required with blood that contains known amounts of hemoglobin as determined by an independent method. Three such methods are available: (1) oxygen capacity (Van Slyke); (2) determination of iron and (3) direct spectrophotometric determination.

The third of these methods is probably the most convenient, but it requires a spectrophotometer of sufficient resolving power so that stray light is negligible. I use both the first and third methods in order to have the added security of two independent techniques. Photoelectric colorimeters and spectrophotometers often are purchased with calibrations supplied by the manufacturer. While the use of such calibrations does not necessarily lead to error, it does encourage a false sense of security on the part of any technician who may be inadequately informed about the principles of the method. Anyone competent to use these instruments should be competent to calibrate them and should do so. For anyone concerned with photoelectric photometers, the work of States[3] on the subject of stray light may be highly recommended.

In the routine operation of single-photocell colorimeters and spectrophotometers, the most common difficulty that is not covered by instructions from the manufacturer is excessive fluctuation in voltage and frequency of the alternating current used. The plain fact is that many of those instruments as supplied will not operate at all satisfactorily on the electric power available in many localities. Unless a source of highly constant current is available, either electronic voltage regulators or storage batteries are absolutely required. The latter are inconvenient and the former expensive, which may possibly explain why manufacturers of photoelectric instruments have not informed their customers that they are often required. This difficulty cannot of course be charged to the method employed in the determination of hemoglobin.

When the individual steps in the clinical determination of hemoglobin are examined, as just outlined, no basic fallacy in the method can be detected. All manipulations are simple and based on proved principles. However, it follows from the laws of biometry that any procedure, however simple, occasionally will give rise to errors far larger than the average error; these instances occupy the extremes of the statistical distribution curve. The number of determinations of hemoglobin performed in a busy clinical laboratory is so large that the laboratory will surely be damned by at least occasional errors of apparently inexcusable magnitude. Deficiencies encountered in simple articles of commercial manufacture, the products of highly refined, automatic, machine processes, provide everyday examples of the inevitability of a certain incidence of error. It is much harder adequately to control the product of the clinical laboratory, which ends up as only a number on a piece of paper, than a manufactured article. The studies of Magath, Berkson and Hurn[2] on determination of erythrocytes have illustrated methods of attack on such problems that no doubt will be applied eventually to all frequently performed procedures in the clinical laboratory. The main problem in the determination of hemoglobin is thus merged into a general one, which dominates all work in clinical laboratories and in other fields that involve large numbers of routine individual operations.

References

1. Andersch, Marie A. and Sacks, M. S.: The hemoglobin pipet as a source of error in photoelectric hemoglobinometry. Am. J. Clin. Path. (Technical Sect.), 15:105-106 (Nov.) 1945.
2. Magath, T. B., Berkson, Joseph and Hurn, Margaret: The error of determination of the erythrocyte count. Am. J. Clin. Path., 6:568-579 (Nov.) 1936.
3. States, M. N.: Stray light in filter photometers. Am. J. Clin. Path., 22:403-410 (May) 1952.
4. Turner, Arthur: A micro method for determination of hemoglobin. Bull. U. S. Army M. Dept., 5:605-607 (May) 1946.
5. Wu, Hsien: Studies on hemoglobin. I. The advantage of alkaline solutions for colorimetric determination of hemoglobin. J. Biochem., 2:173-180 (Oct.) 1922.

This is the third in a series of editorial reports sponsored by the Minnesota Society of Clinical Pathologists and designed to emphasize ways in which laboratory methods may aid in the practice of medicine. Determinations of hemoglobin are performed frequently as office procedures; many different techniques are utilized and it is taken for granted that the results, which often sway important decisions in therapy, are accurate. Yet it is an easily forgotten fact that, even under the best of conditions, results of determinations of hemoglobin may vary tremendously. Therefore, the committee welcomes this report by Dr. Mann, who has had an extensive personal experience in hemoglobinometry.

As emphasized in the two preceding contributions of this series, the physician who specializes in pathology holds himself available at all times for consultation; he hopes that other physicians will feel free to seek him out for any aid he may be able to render in the advancement of medical practice. The editorial committee, consisting of Dr. Arthur H. Wells of Duluth and Drs. Arthur H. Sanford and George G. Stilwell of Rochester, solicits suggestions and comments concerning these reports. In most instances, reprints will be available and may be obtained from either the individual author or the chairman of the committee.

George G. Stilwell,
Chairman, Editorial Committee

Mayo Clinic
Rochester, Minn.

President's Letter

VIEWING FOR HEALTH

Remembering the tremendous following developed by Dr. William A. O'Brien in his many years of radio broadcasting on health matters, it is gratifying, but not surprising that the University of Minnesota became interested in developing a series of television programs along educational lines.

And, as in the case of Dr. O'Brien's broadcasts, the Minnesota State Medical Association was consulted, asked for advice and support.

The Council, in discussing the request, expressed the view that health talks can do great good for people anxious for knowledge about their own and their community's health. With this in mind, the Council assured the University of its co-operation in the initiation of health telecasts.

As a public service, WCCO-TV offered a weekly half hour on Monday mornings from 10:00 to 10:30 for a period of thirteen weeks, which began February 9. Because of this, it was possible to sponsor such a series for the entire thirteen weeks, which would have carried prohibitive costs if contemplated on a commercial basis.

It should be noted that all programs are being supervised for scientific accuracy prior to their televising. Doctors in each field of discussion were called in to aid the producers with subject matter and its treatment. The entire series is also being supervised by the Association's Committee on Public Health Education, through its radio and television committee.

The subject material is largely of a general health nature, stressing problems commonly occurring in everyday life in the home. Personnel on the program are not doctors engaged in the private practice of medicine, and supporting personnel are being drawn from the University's school of dramatics. The staff of the University's radio station, KUOM, with the use of the time and facilities of WCCO-TV, is developing the series.

We feel that Minnesota is one of the leaders in initiating this new project. Telecasts on health matters are a relatively new departure for organized medicine. There are a few similar shows currently running in other areas of the nation, and the American Medical Association has telecasts on health subjects done by professional television writers and producers.

The series is part of the continuing program of the Committee on Public Health Education to reach the public with information on important matters of health.

With the success of this Minnesota series, it is seen that television can be a very valuable media by which medicine can further the development of a positive approach to health and medical matters.

Conrad J Campbell

President, Minnesota State Medical Association

Editorial

CARL B. DRAKE, M.D., *Editor;* GEORGE EARL, M.D., HENRY L. ULRICH, M.D., *Associate Editors*

THE STATE ASSOCIATION CENTENNIAL

ONE HUNDRED years ago on July 23, 1853, the Minnesota State Medical Association was founded. This we know, not from our own records, but from reports which appeared in newspapers of that year. *The Minnesotan* of Saint Paul in its July 16, 1853, issue states that the medical profession of the Minnesota territory would hold a convention in Saint Paul on July 23. The July 30, 1853, issue of the *St. Anthony Express* contains an account of the meeting in the Court House of St. Paul of nine physicians of the St. Paul-St. Anthony area (two others being present by request) and the formation of the Minnesota Medical Society. A constitution was adopted and officers elected.

Meetings were held until 1857, how many and how frequently is not definitely known. It is quite certain that none was held in the period from 1857 to 1869 when on February 1 the society was revived at a meeting held in the International Hotel in St. Paul.

When the Minnesota Medical Society was launched by the handful of physicians in the St. Paul-St. Anthony area, Minnesota was still a territory. The bill organizing the Territory of Minnesota was passed by Congress on March 3, 1849. St. Paul was to be the capital and had a population of 250 to 300 persons at that time. On April 28, 1849, the first issue of the first newspaper, *The Pioneer,* made its appearance. Governor Alexander Ramsey arrived by steamboat on May 27 and, because hotel accommodations were inadequate, he and Mrs. Ramsey became the house guests of the Hon. H. H. Sibley at Mendota. It was not until 1858, when on May 11 the President approved an act of Congress, that Minnesota became a state and H. H. Sibley was declared its first governor. He had been duly elected the preceding October in anticipation of statehood. In the fall of 1859, however, Alexander Ramsey was elected governor and took office in 1860.

It seems highly desirable that the centenary of our State Association should receive appropriate recognition. Although, strictly speaking, the meeting to be held in St. Paul, May 18-20, is not the 100th annual meeting, we are, as an association 100 years old.

The centenary will be the theme of the meeting. More than the usual number of out-of-state visitors will take part in the scientific program. Sir Alexander Fleming, of penicillin fame, will speak on "Antibiotics in Heart Disease," and Dr. Richard R. Trail will speak on "X-Ray of Chest Cancer." Both are from London and will also take part in the centenary celebration of St. Joseph's Hospital on May 16.

MINNESOTA MEDICINE plans to devote its April issue to a celebration of the Association's Centenary. A number of members have consented to write on the general theme of what a century has meant in their particular spheres of medical interest. The development of medical science the past 100 years, and more especially the past fifty years has been phenomenal. The art of the practice of medicine, on the other hand, has lagged. It should be most interesting to pause for a review of this progress on the occasion of our Centenary.

ST. JOSEPH'S HOSPITAL CENTENNIAL

THIS seems to be centennial year in Minnesota; a well-known insurance company, a bank, the Minnesota State Medical Association and St. Joseph's Hospital, all in St. Paul, will be one hundred years old this year.

It was in 1853 that the cornerstone to St. Joseph's Hospital in St. Paul was laid. In commemoration of the event, a one-day scientific session is planned for May 16, 1953, in the ballroom of the Hotel Lowry, St. Paul, Minnesota, at which time Sir Alexander Fleming, of penicillin fame, will be one of the speakers. Also, because the first successful cholecystectomy in America was done at St. Joseph's Hospital on September 24, 1886, by the late Dr. Justus Ohage, Sr., a symposium on diseases of the gall bladder will be held during the morning sessions. All doctors are cordially invited to attend these meetings. In the evening, a banquet will be held in the Hotel St. Paul, at which time Dr. Harold Foss, President of the American College of Surgeons, and Dr. Louis H. Bauer, President of the American Medical Association, will speak. This dinner meeting will be open to the public. The full program will appear in later issues of this journal.

Our congratulations to St. Joseph's Hospital, not only for being the oldest hospital in the State, but also, for the important part it has played in the care of the sick in St. Paul. The doctors and patients owe a debt of gratitude to the Sisters of St. Joseph's, who, by their courage, charity and spirit of self-sacrifice, have so faithfully run the hospital all these years.

The people of Minnesota salute you, St. Joseph's Hospital, and extend their best wishes to you for the next one hundred years.

PRESIDENT'S COMMISSION ON HEALTH NEEDS OF THE NATION

THE FIRST REPORT of the President's Commission appeared December 18, 1952. More volumes are to follow. The Commission was given a large order restricted to a limited period of a year, and has now announced its intention to continue in order to further clarify the results of its investigation. A mass of factual data was collected at the thirty all-day sessions in Washington and eight hearings outside of the capitol, on various phases of medical care.

Although the head of the Commission, Dr. Paul Magnuson, is a surgeon of ability and has had widespread administrative experience, numerous members of the Commission were known in advance to be socialist minded and the profession was skeptical from the start as to the conclusions which would be reached.

While the objective of the Commission, the betterment of the health of the American people, is the same as that of the medical profession, we cannot agree that the answer is for Uncle Sam to put his hands in his pockets and hand out more millions. After all, there is a limit to federal spending.

The Commission makes thirty-three recommendations for federal appropriations to be matched by equal amounts of the taxpayers' money to be supplied by the states. The program will require at least a billion of additional federal funds and another billion of state funds ($2,000,000,000 at least). Assuming this expenditure is desirable, can the national economy stand an additional 2 billions of taxation and governmental spending? This would mean further inflation and increases in cost of present medical care.

One of the Commission's proposals, that the 4.5 million beneficiaries of Social Security be provided with medical care through increase in taxes, means compulsory health insurance for this segment of the population, a policy contrary to the opinion of the Nation as expressed by thousands of organizations in the country and at the polls.

The federal government is at present spending millions of dollars in subsidizing hospital construction through the Hill-Burton Act and is showing little co-ordination by its construction of additional facilities for the Veterans Administration to care for non-service-connected cases which should be cared for in civilian hospitals. It thus furthers competition for already scarce hospital personnel between Veterans hospitals themselves and between Veterans and civilian hospitals.

The Commission further recommends the appropriation of federal funds not only for the construction and rehabilitation of medical school buildings but for the maintenance of the schools. The AMA has gone on record that acceptances of federal subsidy by medical schools, except in the form of one-time grants for construction purposes, endangers the future independence of medical training.

If the election last November meant anything, it meant a retrenchment in federal spending. We live in a critical age when our production and economy in general are being taxed to the utmost to defend our country from foreign aggression. It is no time to extend our socialistic trends. Once adopted, socialism is almost impossible to abandon.

Medical Economics

Edited by the Committee on Medical Economics
of the
Minnesota State Medical Association
George Earl, M.D., Chairman

AMA CRITICIZES COMMISSION REPORT

The official reaction of the Americal Medical Association toward the report of the President's Commission on the Health Needs of the Nation is seen in the January 24 issue of *The Journal of the American Medical Association.* The Board of Trustees issued a statement which summarizes its feeling about the Commission's accomplishments: "The Commission has little to offer that is new."

While the Board criticized the report, it did recognize certain difficulties under which the Commission had to work. The statement was issued with this qualification: "Comments on this report are made with the full understanding of the very wide scope of the assignment and the very limited time the Commission had to attempt to accomplish its task."

Solution: Federal Funds?

Nevertheless, the Board of Trustees did not limit its criticism on this account. It explained:

> "The Commission, by executive order, was required to submit its final report in one year. It has labored arduously and any cricitism of its final report must be made in the light of the tremendous scope of its assignment and the time limit on its activities. The Board, however, is not justified in withholding criticism on this account, since the impact of such a report, unless subjected to careful analysis, may carry undue weight in future discussions of the many important problems affecting the health of the American people."

The Board then stated its major objection to the Commission's recommendations: that the answer proposed for the solution to almost every problem is additional federal funds. And, the Board continues, "aside from the question of how these funds are to be raised, in the background of all of these endeavors lurks the shadow of federal control." Reiterating the danger of federal control further, the Board stated:

> "This control may come directly or by established standards to which all states must conform. These standards will not be written into the law but will be established by administrative regulations. If the pattern laid down in former bills is followed, the administrative agency will be authorized to set up a plan of its own, in any state that does not conform to federal standards."

Would Spiral Inflation

The fact that federal funds are recommended would only tend to spiral inflation, according to the Board of Trustees. It feels that because people are interested in higher quality medical care, and because millions are already covered by voluntary health plans, "an increase in federal expenditures leading to further taxation will give one more twist to the spiral of inflation and force a higher premium rate on those already protected." The Board comments further:

> "The philosophy behind this report is barren. While it gives lip service to the responsibility of the individual for his own health, it destroys this sense of responsibility by insistence on federal aid from every angle. While it stresses the importance of a personal physician, it demeans his standing by unfavorable and false comparisons of his ability to render good medical care as contrasted to the much vaunted groups of highly trained specialists."

Hits "All-Wise Government"

Noting that the report when first released, was devoid of factual supporting material, the Board says that the underlying philosophy is quite evident: "The argument is that health is conditioned by food, housing and education so that control of all of these factors, as well as health measures *per se,* should come under the direction of an all-wise federal government. Without naming it, the Commission has described the welfare state. It may be just as well to call it by its true name, the socialist state."

Federal Health Services Ignored

The Board pointed out that one of the commission's duties under the president's directive was to investigate the extent of federal, state and local government services in the health field and the desirable level of these expenditures considering private resources and other financial demands on government. However, there is little evidence in Volume I—the findings and recommendations—that the Commission has seriously considered this part of the directive under which it operated, according to the Trustees.

Reverse Order Criticized

At the time of the appraisal of the Commission's report, only Volume I was available, and Volume I was the Commission's final conclusions and recommendations. It is interesting to note this apparent reversal of order of issuing reports of investigating groups. "The scientific and logical approach would be the presentation of factual material, analysis of the data presented, comparison of this data with other material of like nature, presentation of conclusions on the basis of facts, and finally, recommendations as to action," the Board concluded.

The Board also noted certain inconsistencies and obvious ignoring or skimming of certain facts about the nation's health. In conclusion it stated:

> "The Board is fully aware that it is not in possession of all of the material that came before the Commission, and it awaits the publication of these facts, in the full report, before reaching final conclusions.
>
> "In Volume I, brief references are noted to the tremendous advances made by American medicine, in the last half century, without benefit of any large contribution from the federal government and without federal standardization.
>
> "The Board is therefore somewhat confused by the Commission's strong and repeated urging that the health of the American people can only be secured by widespread invasion by the federal government into almost every phase of medical activity."

EWING TRIP CALLED OSCAR'S "DEEP BOW"

"Oscar Awards Himself an Oscar" is the interesting title of a recent editorial from the *Chicago Tribune*. The article takes a swing at Oscar Ewing's recent pre-retirement swing to far parts of the world—a trip which Ewing justified as "a personal counter-offensive against communism."

The editorial describes the trip thusly: "The departing federal security administrator commanded himself to take a deep bow over his intrepidity, unselfishness and service to the nation in making a two-month trip abroad at the expense of the taxpayers."

The *Chicago Tribune* is not the only one concerned about the value of the journey. Some members of Congress, especially Rep. Gross of Iowa, were quite skeptical about the jaunt's benefits to the nation. Rep. Gross called it "a joy ride and last fling."

Ewing Rationalizes

According to the *Tribune* article, Mr. Ewing justified his trip as his personal counter-offensive against communism, and he said that Communists had been jeering that the United States had no social welfare programs for its citizens, and that by his personal appearances here, there, and everywhere, he was able to offset this foul libel. Comments the *Tribune,* "We are supposed to be thankful," and goes on to say, "It is a matter of staggering indifference to most Americans what the Communists say, and, in this particular matter many Americans would be just as content if the Communists were, indeed, correct in their statement that the United States has no social welfare programs."

> "Mr. Ewing is as one with the Communists in thinking that there is great virtue in handouts of every sort distributed by the state. That is the New Deal outlook, which is not essentially different from the communist outlook. Both philosofies seek all power for the state and endeavor to vest the state with benevolence by operating on the theory that if everybody is taxed into poverty the state will have the necessary revenues to dole out burocratic happiness to the greatest number."

In conclusion, the paper says, "The Eisenhower administration is said to be concerned with economy and reduced taxes. A good place to start the saving would be by requiring Mr. Ewing to pay his own frate, which will run into the thousands."

'54 HEALTH-WELFARE BUDGET ISSUED

The federal health and welfare budget proposals for fiscal 1954 have been issued recently, and they show some increases over the current fiscal spending, which ends on June 30. It should be noted, however, that these proposed figures represent the Truman administration's estimates, and they can be altered by the Eisenhower administration as seen fit.

Expenditures for the Veterans' Administration allow for 1954, a total of $774,000,000 ($691,000,000 for medical care, $83,000,000 for hospital construction), compared to a total of $763,000,000 for 1953 ($660,000,000 for medical care and $103,000,000 for hospital construction). It is noted that hospital construction is slightly less for 1954 while medical care costs are expected to rise. The hospital construction program costs are exclusive of Hill-Burton program funds, which come under the Federal Security Agency, Public Health Service.

Total expenditures for the Federal Security Agency for fiscal 1953, ending June 30, will be $1,545,974,000. Estimates for 1953 are $1,870,785,000. These figures are divided among: public assistance, Public Health Service, the Children's Bureau, Vocational Rehabilitation and Food and Drug Administration. Under the Public Health Service is control of venereal disease, control of tuberculosis, control of communicable disease, Hill-Burton hospital program, Cancer Institute, Heart Institute, Mental Health Institute, Arthritis and Metabolic Institute, Neurology and Blindness Institute, Microbiology Institute.

Civil Defense Administration budget figures have been increased more than double to include certain funds for federal stockpiling of civil defense materials. The Atomic Energy Commission funds are increased a little over $1 million. Funds for the Bureau of Indian Affairs have been increased about $6 million, while those for the National Science Foundation remain the same.

Total increase in expenditure estimates for health and welfare matters amount to approximately $400,000,000. The total figures for health and welfare in 1953 and 1954, respectively, are: $2,279,394,000 and $2,654,855,000.

FEWER APPLICANTS FOR MEDICAL SCHOOLS

Continuing a three-year trend, the number of students applying for admission to the nation's medical schools declined again this year, according to the official study of 1952-53 applicants by John M. Stalnaker, director of studies for the Association of American Medical Colleges.

Results of the study, reported in the February issue of *The Journal of Medical Education*, show that some 3,150 fewer persons applied this year than in 1951-52 and some 7,600 less than three years ago.

This means that competition among the medical schools for high-ranking student applicants is increasing. Of 16,763 persons who made application last fall, 7,778 were accepted.

The survey shows that the average pre-medical student applies to three or four medical schools, so that no school can expect to have every student they select. One cautious student this year applied to forty-five medical schools and was accepted by one.

PERIPHERAL ARTERIAL EMBOLISM

(Continued from Page 234)

28. MacFarlane, J. A.: Multiple emboli treated surgically. Brit. M. J., 1:971-972, 1940.
29. Madden, J. L.: Resection of the left auricular appendix. J.A.M.A., 140:769-772, 1949.
30. McKechnie, R. E., and Allen, E. V.: Sudden occlusion of the arteries of the extremities. A study of 100 cases of embolism and thrombosis. Surg. Gynec. & Obst., 63:231-240, 1936.
31. Murray, G.: Aortic embolectomy. Surg. Gynec. & Obst., 77:157-162, 1943.
32. Neely, J. M.: Paradoxical embolus. Nebraska M. J., 21:61-62, 1936.
33. Schmorell, H.; cited by Albright, H. L., and Leonard, F. C.: Embolectomy from the abdominal aorta. New England J. Med., 242:271-277, 1950.
34. Scott, H. W., Jr., and Williams, J. M., Jr.: Multiple arterial emboli. Three successful embolectomies in a case of bacterial endocarditis. Arch. Surg., 58:28-34, 1949.
35. Thomason, J. R., and Moretz, W. H.: Continuous lumbar paravertebral sympathetic block maintained by fractional instillation of procaine. Surg. Gynec. &. Obst., 89:447-453, 1949.
36. Till, A. S., and Fairburn, E. A.: Massive neoplastic embolism. Brit. J. Surg., 35:86-89, 1947.
37. Veal, J. R., and Dugan, T. J.: Peripheral arterial embolism. Ann. Surg., 133:603-610, 1951.
38. Warren, R., and Linton, R. R.: The treatment of arterial embolism. New England J. Med., 238:421-429, 1948.
39. Willius, F. A.: Embolic manifestations of heart disease. J. Iowa M. Soc., 16:437-440, 1926.
40. Young, R. D., and Hunter, W. C.: Primary myxoma of the left ventricle with embolic occlusion of the abdominal aorta and renal arteries. Arch. Path., 43:86-91, 1947.

PREMATURE SURVIVAL

(Continued from Page 254)

Bibliography

1. Baumgarten, L.: The program for prematurely born infants in New York City. New York State J. Med., 50:289-293 (Feb.) 1950.
2. Capper, A.: Fate and development of immature and premature child, clinical study: review of literature and study of cerebral hemorrhage in newborn infant. Am. J. Dis. Child., 35:362 (Mar.) 1928.
3. Chipman, S. S., and Treating, W. L.: Louisiana's program for the care of the premature infant. Pediatrics, 5:45-51 (Jan.) 1950.
4. Gordon, H. H.: Some facts of the Colorado premature infant program. The Child, 14:10 (Apr.) 1950.
5. Hess, J. H., et al: Physical and Mental Growth of Prematurely Born Children. Chicago: University of Chicago Press, 1934.
6. Hess, J. H.: Care of the premature infant, a clinic. M. Clin. North America, 34:41-53 (Jan.) 1940.
7. Koenig, H.: What happens to prematures. Am. J. Public Health, 40:803-807 (July) 1950.
8. Marquis, H.: When a premature baby is born. The Child, 14:10 (Apr.) 1950.
9. Wallace, H. M.; Losty, M. A., and Wishick, S. M.: Prematurity as a public health problem. Am. J. Pub. Health, 40:41-47 (Jan.) 1950.

Use of Alidase® Permits Subcutaneous Administration of Fluids at Usual Intravenous Rates

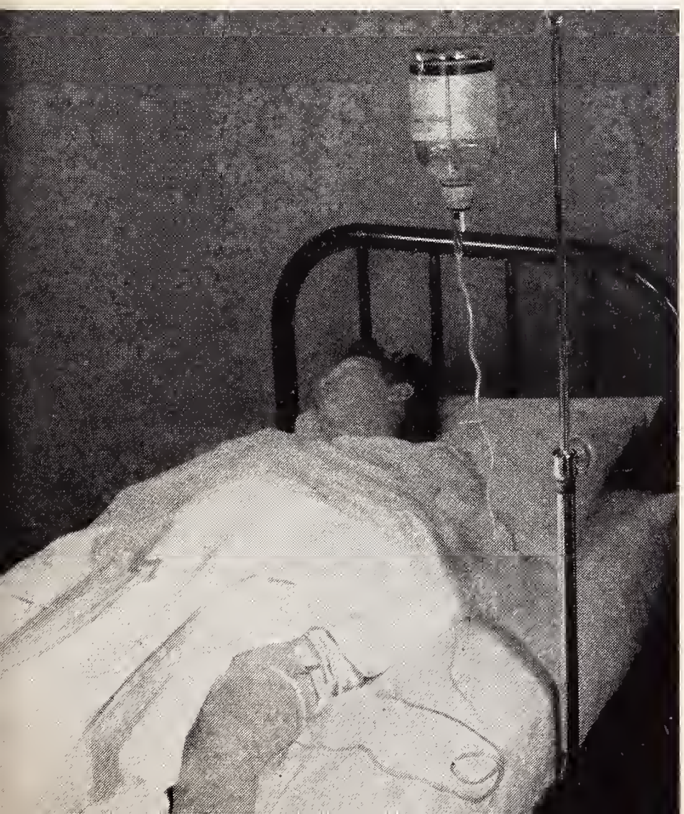
Addition of Alidase to the first few cubic centimeters of fluid during hypodermoclysis speeds absorption to a degree approximating that of the intravenous route. Use of highly purified hyaluronidase in this manner avoids the well-known difficulties encountered with venoclysis, saves valuable nursing time and is more comfortable to the patient.

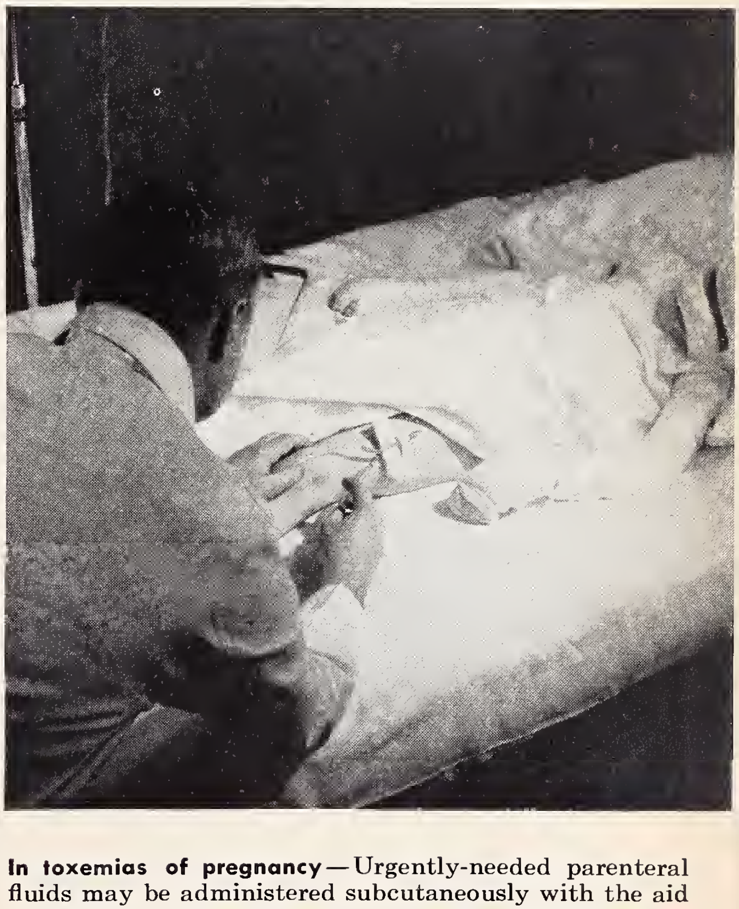
Hechter, Dopkeen and Yudell[1] have found that the use of hyaluronidase has "markedly increased the rates of absorption and administration of hypodermoclysis with no untoward reactions." They also found that extremely small amounts of this enzyme facilitated the absorption of fluids in that greater amounts of fluids were absorbed by the patient in a given period of time and that the localized swelling following hypodermoclysis disappeared more promptly.

Similar results with Alidase were recounted by Schwartzman, Henderson and King.[2] They observed "that absorption of various types of solutions, such as saline, glucose in saline, Hartmann's solution, Ringer's solution, penicillin, streptomycin, Adrenalin, and procaine was facilitated in every case."

In operative states—Alidase circumvents the complicating factors of venous thrombosis and "wornout" veins which frequently make fluid administration by vein difficult and dangerous. Simplicity and safety of Alidase make hypodermoclysis a method of choice for preoperative preparation and postoperative maintenance.

In burns—Plasma and electrolyte solutions can be given subcutaneously at effective rates when Alidase is employed; collapsed veins or risks of thrombosis are not a problem with this method.





In toxemias of pregnancy—Urgently-needed parenteral fluids may be administered subcutaneously with the aid of Alidase, eliminating risk of thrombosis attending repeated intravenous administration of electrolyte solutions. Alidase is the highly purified Searle brand of hyaluronidase and is accepted by the Council on Pharmacy and Chemistry of the American Medical Association.

G. D. Searle & Co. *Research in the Service of Medicine*

1. Hechter, O.; Dopkeen, S. K., and Yudell, M. H.: The Clinical Use of Hyaluronidase in Hypodermoclysis, J. Pediat. 30:645 (June) 1947.
2. Schwartzman, J.; Henderson, A. T., and King, W. E.: Hyaluronidase in Fluid Administration: A Preliminary Report, J. Pediat. 33:267 (Sept.) 1948.

✦ Reports and Announcements ✦

CIVIL SERVICE POSITIONS AVAILABLE TO PHYSICIANS

The United States Civil Service Commission has announced a new examination for medical officers for filling positions in various specialized fields of medicine, with salaries ranging from $5,940 to $10,800 a year. The positions are principally in the Bureau of Indian Affairs located on reservations west of the Mississippi River and in Alaska. A few positions may be filled in the Fish and Wildlife Service. Applicants must be fully qualified as doctors of medicine, and for most positions must be currently licensed to practice medicine and surgery in a State or Territory of the United States. Appropriate experience is required.

Further information and application forms may be obtained from the U. S. Civil Service Commission, Washington 25, D. C., or from most first- and second-class post offices. Applications will be accepted until further notice by the Board of U. S. Civil Service Examiners, Bureau of Indian Affairs, Department of the Interior, Washington 25, D. C.

NATIONAL SOCIETY FOR MEDICAL RESEARCH

The seventh annual meeting of the National Society for Medical Research was held February 8, 1953, at the Palmer House in Chicago.

Dr. Anton J. Carlson, Professor Emeritus of Physiology at the University of Chicago, was re-elected President. Dr. Andrew C. Ivy, Vice President of the University of Illinois and head of the Chicago Professional Colleges (on leave) was re-elected Secretary-Treasurer. Dr. Maurice Visscher, head of the Department of Physiology, University of Minnesota, was elected Vice President.

The Society voted to give an award in the form of a certificate to Bill Davidson, staff writer for Collier's magazine, for contributions to public health and welfare through scientific articles. A film on the use of animals in medical research is now in production by the Society and will be released shortly.

AMERICAN GOITER ASSOCIATION

The American Goiter Association meeting for 1953, will be held in the Drake Hotel, Chicago, May 7 through 9. The program for the three-day meeting will consist of papers and discussions dealing with goiter and other diseases of the thyroid gland.

COLLEGE OF PHYSICIANS POSTGRADUATE COURSE

Course No. 4—Selected Subjects in Internal Medicine, will be held at Rochester, Minnesota, under the auspices of the Mayo Clinic and Mayo Foundation, March 23-27, 1953.

The directors are Drs. Arlie R. Barnes, W. H. Dearing, Hugh R. Butt, and Edgar V. Allen. Fees are $30 for members and $60 for non-members.

This course is planned to present selected subjects in internal medicine. The talks will include various diseases of metabolism, special talks on gastroenterology, antibiotic therapy, chest diseases, hematologic and cardiovascular disorders. Fundamental physiology as well as clinical and therapeutic aspects of these diseases will be discussed.

Registration must be made through the Executive Offices of the College, E. R. Lovaland, Executive Secretary, 4200 Pine Street, Philadelphia 4, Pennsylvania.

SURGEONS HALL OF FAME

The International College of Surgeons, whose headquarters are housed in a limestone mansion at 1516 Lake Shore Drive, Chicago, recently purchased a mansion next door to house the Hall of Fame. Rebuilding will include the design of individual niches for busts of the great surgeons to be commemorated together with special lighting and bronze plaques detailing their contributions to human welfare.

Those to be honored will be chosen by votes of an electoral college with representatives from every part of the world. Names will be submitted to this group by national organizations or by individual surgeons.

The Board of Trustees for the Hall of Fame includes Morris Fishbein, M.D., Chicago; Henry W. Meyerding, M.D., Rochester, Minnesota; and Alexander Brunschwig, M.D., New York.

AUTORADIOGRAPHY COURSE

An advanced course in autoradiography and three basic courses in radioisotope techniques are course offerings of interest to medical and biological personnel planned this spring and summer by the Special Training Division of the Oak Ridge Institute of Nuclear Studies.

The autoradiography course will be held from June 15-25, and basic courses of four weeks' duration will begin on June 8, July 6, and August 10.

The autoradiography course will be the second to be given at Oak Ridge, an earlier one having been given in the summer of 1951. It is intended for research level personnel using or planning to use this technique in their research.

Lectures, consultations, laboratory demonstrations and discussions will comprise the course. Leaders in the field will be on hand as lecturers and demonstration supervisors.

Subjects to be covered include both the application of the autoradiographic method and the theoretical bases of the method.

Application forms and additional information may be obtained from the Special Training Division, Oak Ridge Institute of Nuclear Studies, P.O. Box 117, Oak Ridge, Tenn.

(Continued on Page 266)

THE

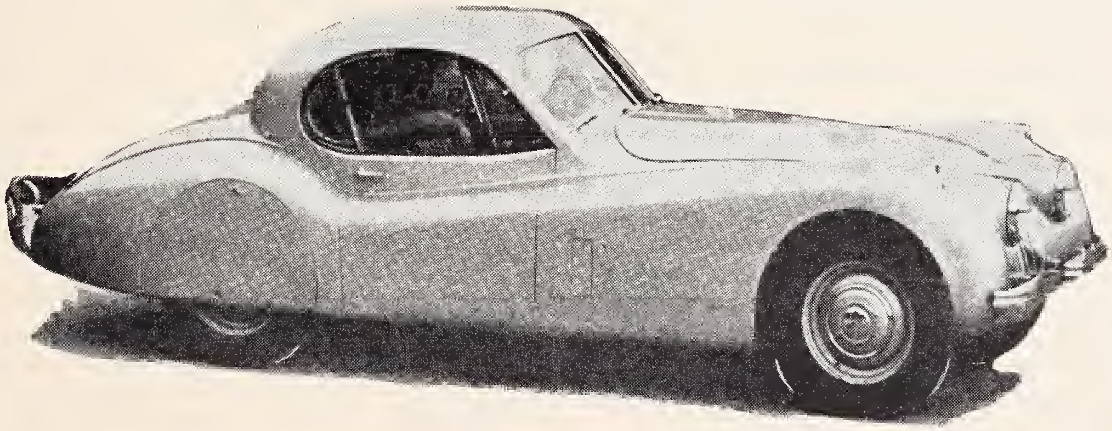
JAGUAR

SPORTS COUPE

. . . a perfect combination of beauty and performance!

No other car on the road today can compare with the unique Jaguar Sports Coupe. The Jaguar is a car with a twin-overhead camshaft engine that gives swift, sure power . . . a car that has reached the highest possible standard of functional beauty. With an interior that boasts soft leather upholstery, polished walnut wood and deep pile carpeting . . . a steering wheel that responds to the touch of a finger . . . a torsion-bar suspension that assures a safe, road-hugging ride, the Jaguar Sports Coupe is the finest car of its class in the world today!

$4175.00 TAX PAID & DELIVERED
(price includes heater and turn indicators)



Sold by

ARCHIE WALKER JR., IMPORTED MOTORS

4317 Excelsior Boulevard, St. Louis Park, Minn. WH. 6490 WH. 1101

Also agents for

MG • MORRIS • BENTLEY • HILLMAN • ROVER • ALLARD
ROLLS-ROYCE • SUNBEAM TALBOT

Knox Gelatine... useful protein supplement in health and disease

Necessary for Nitrogen Balance

Good dietary practice admits of an optimum protein intake of about 100 grams per day with a minimum of not less than 1 gram per kilo of body weight. At least half of the protein should be of first class biologic value, the remainder furnished in a readily assimilable form the 14 or more synthesizable amino acids necessary for nitrogen balance.

Excess Protein Assured

Since large amounts of whole protein are necessary to assure a margin of safety for varied metabolic needs, an excess of protein intake is assured through the use of Knox Gelatine Drink daily. One envelope of Knox Gelatine readily prepared with fruit juice, water or milk, as the patient desires, provides 7 grams of gelatine of which 85 per cent is pure protein.

For Optimal Health

Since protein is not stored in the body, the daily catabolic needs and any extraordinary requirements must be taken care of daily, in order to assure optimal health.

Glycine and Proline Important

Knox Gelatine is a valuable protein supplement, easy to digest and administer as well as being non-allergenic. Knox Gelatine contains important glycine and proline necessary for hemoglobin formation. It has a high specific dynamic action, spares essential amino acids and furnishes amino acids for the continuous dynamic exchange of nitrogen in the tissues.[1]

[1] Schoenheimer, R., Ratner, S., and Rittenberg, D., J. Biol. Chem., 127:333, 1939 and 130:703, 1939.

You are invited.. to send for brochures on diets of Diabetes, Colitis, Peptic Ulcer . . . Low Salt, Reducing, Liquid and Soft Diets. KNOX GELATINE, JOHNSTOWN, N. Y. DEPT. MM

Available at grocery stores in 4-envelope family size and 32-envelope economy size packages.

KNOX GELATINE U. S. P.

All Protein No Sugar

KNOX
UNFLAVORED
GELATINE
KNOX

(Continued from Page 264)

SUMMER CAMP FOR DIABETIC CHILDREN

A summer camp for diabetic children will be opened for the fifth season under the auspices of The Chicago Diabetes Association, Inc., from July 21, 1953, to August 10, 1953, at Holiday Home, Lake Geneva, Wisconsin.

In addition to the regular personnel of the camp, there will be a staff of dieticians and resident physicians, trained in the care of diabetic children, furnished by The Chicago Diabetes Association.

Boys and girls, ages eight to fourteen years inclusive, will be accepted at a fee of $150.00 (which covers the three-week camping period and transportation from Chicago). Fee reductions may be arranged when considered necessary.

Physicians are requested to notify parents of diabetic children and to supply the names of children who would like to attend camp. Applications may be obtained from, and inquiries should be addressed to: Service Unit, Chicago Diabetes Association, 110 South Dearborn Street, Chicago 3, Illinois.

Limited capacity requires prompt application.

MINNESOTA SOCIETY OF INTERNAL MEDICINE

The spring meeting of the Minnesota Society of Internal Medicine will be held in Minneapolis, Saturday, May 23. Titles and abstracts of papers for the meeting should be sent to Dr. R. S. Ylvisaker, 78 South Ninth Street, Minneapolis 2, on or before April 18.

ASSOCIATION BACKS TV SHOW

The Minnesota State Medical Association is cooperating in the production of a 13-week series of telecasts, put on by the University of Minnesota, through its radio station, KUOM. The telecasts can be viewed on WCCO-TV every Monday morning at 10:00 and will cover various phases of general health problems.

Doctors are urged to watch the show and general comments and suggestions are invited. The entire series is under the supervision and direction of the Association's Committee on Public Health Education.

CENTENNIAL ART AND HOBBY SHOW

By this time the entry blanks and rules and regulation sheets are distributed to all potential exhibitors in the 100th Anniversary Art and Hobby Show of the Minnesota State Medical Association, May 18, 19 and 20. If you have any photography, paintings, drawings, leather craft, wood carving, wood working—anything you have made yourself that you want to show—get your entry blanks in. Deadline for receiving the entry blanks is *April 15*. This will give time to make up a catalogue for the exhibition.

Blanks may be obtained from the Minnesota State Medical Association office, 496 Lowry Medical Arts Building, St. Paul 2, Minnesota, or from chairman James L. Benepe, M.D., 214 Lowry Medical Arts Building, St. Paul 2, Minnesota.

Please follow the rules and regulations in returning your entry blanks and in sending in your entries.

. . . now conveniently located for faster service

You need no longer risk driving through congested traffic to examine new equipment. In this new, modern store you will find complete stocks of instruments and supplies for the physician; model displays of hospital equipment of every type; and a comprehensive range of equipment, apparatus and supplies for the modern medical laboratory. We cordially invite you to visit us at your convenience, or call us for prompt emergency service. Free parking is provided adjacent to building. Telephone: LIncoln 7601.

a. s. aloe company OF MINNESOTA • 927 Portland Ave. • Minneapolis 4, Minn.

CONTINUATION COURSES

A continuation course in *Gynecology for Specialists* in that field will be presented by the University of Minnesota on April 16 to 18, 1953. This will be the same program which was originally announced for December, 1952, but which had to be cancelled. The two and a half-day session will be held at the Center for Continuation Study on the University Campus. Subjects to be considered will include endometriosis, culdoscopy as a diagnostic tool, and gynecologic malignancy including the question of carcinoma *in situ*. The course will be presented under the direction of Dr. John L. McKelvey, Professor and Head, Department of Obstetrics and Gynecology, and the remainder of the faculty will include clinical and full-time members of the staff of the University of Minnesota Medical School.

* * *

The University of Minnesota announces a continuation course in *Gastroenterology for General Physicians* which will be held at the Center for Continuation Study from April 27 to 29. All phases of gastrointestinal disease will be covered, and emphasis will be placed on therapy throughout the course. The visiting faculty will include Dr. Chester M. Jones, Clinical Professor of Medicine, Harvard University Medical School, Boston, who will also deliver the Jackson Lecture on the evening of April 28. The course will be presented under the direction of Dr. C. J. Watson, Professor and Director, Department of Medicine, and the remainder of the faculty will include clinical and full-time members of the staff of the University of Minnesota Medical School and the Mayo Foundation.

* * *

The University of Minnesota announces a continuation course in *Surgery for General Physicians* which will be held in the Center for Continuation Study on May 7 to 9, 1952. The visiting faculty for the course will include Dr. Charles Huggins, Professor of Surgery, University of Chicago School of Medicine, who will deliver the annual E. Starr Judd Lecture on Thursday, May 7. The program will be presented under the direction of Dr. O. H. Wangensteen, Professor and Director of Surgery, and the remainder of the faculty will include clinical and full-time members of the staff of the University of Minnesota Medical School and the Mayo Foundation.

* * *

The University of Minnesota will present a continuation course in *Arthritis and Allergy for General Physicians* next May 11-13 at the Center for Continuation Study. Practical management of problems in both of these fields will be emphasized. The visiting faculty will include Dr. Walter S. Burrage, Chief of the Allergy Clinic, Massachusetts General Hospital, Boston. The course will be presented under the direction of Dr. C. J. Watson, Professor and Head, Department of Medicine, and the remainder of the faculty will include members of the clinical and full-time staffs of the University of Minnesota Medical School and the Mayo Foundation.

THE
MEDICAL PROTECTIVE
COMPANY
FORT WAYNE, INDIANA

PROFESSIONAL PROTECTION
EXCLUSIVELY
SINCE 1899

specialized service
assures "*know-how*"

MINNEAPOLIS Office:
Robert L. McFerran, Rep.,
2422 Clinton Ave. So., Apt. E-14,
Telephone Fillmore 1292

COMPLETE
Laboratory Service
IN
Deep X-Ray Therapy
Roentgen Diagnosis
Radium Treatment
Radium Rentals
Clinical Biochemistry
Clinical Pathology
Tissue Examination
Clinical Bacteriology
Interpretation of YOUR E.K.G. records
Toxicological Examinations

MURPHY LABORATORIES
—*Est. 1919*
Minneapolis: 612 Wesley Temple Bldg., At. 4786
St. Paul: 348 Hamm Bldg., Ce. 7125
If no answer call: 222 Exeter Pl., Ne. 1291

COUNTY MEDICAL SOCIETIES

President of the *Stearns-Benton Medical Society*, Dr. Joseph B. Gaida, has announced the following committee appointments for the coming year.

Legislative: Drs. John Beuning and Gilman Goehrs, St. Cloud; Dr. A. Zachman, Melrose, and Dr. N. F. Musachio, Foley.

Program: Drs. O. Phares, L. Veranth, and E. Anderson, St. Cloud, and Dr. J. C. Grant, Sauk Centre.

Contact: Drs. C. F. Brigham, Sr., and L. Evans, Sauk Rapids; Dr. H. Reif, St. Cloud, and Dr. L. Kuhlmann, Melrose.

Radio: Dr. F. Baumgartner, Albany; Dr. D. Hoehn, Holdingford; Dr. W. D. Cleaves, Sauk Centre, and Dr. T. Fleming, St. Cloud.

* * *

Officers of the *Washington County Medical Society* re-elected for another term at the January 13 meeting were Dr. Ray G. Johnson, Stillwater, president; Dr. F. M. McCarten, Stillwater, vice president; and Dr. R. E. Carlson, Stillwater, secretary-treasurer. Dr. H. T. Fasbender and Dr. N. J. Kulzer, Hastings, represented the Hastings area which is considering joining the Washington County Society.

* * *

Dr. Walter F. H. Dubbe, New Ulm, was elected president of the *Brown-Redwood-Watonwan County Medical Society*, at the annual meeting, held in January. He succeeds Dr. O. B. Fesenmaier. Other officers are Dr. Albert Fritsche, New Ulm, vice president; Dr. Carl Fritsche, New Ulm, secretary and treasurer; Dr. Rolf Hovde, Winthrop, with Dr. Earl Schroeppel, Winthrop, as alternate delegate to the Minnesota State Medical Association. Three censors elected were Dr. Howard Vogel, New Ulm; Dr. E. J. Wohlrabe, Springfield, and Dr. Adolph Dysterheft, of Gaylord.

Dr. Lyle A. French of the department of Neurosurgery of the University of Minnesota Medical School, spoke to the members on "Low Back Pain and the Intervertebral Disc."

* * *

Dr. John H. Moe, Minneapolis, was elected president of the *Hennepin County Medical Society*, February 2. He will succeed Dr. Claude J. Ehrenberg, October 1. Other officers to assume their duties at the same time are Dr. Willis L. Herbert, first vice president; Dr. Charles A. Aling, second vice president; and Dr. Conrad J. Holmberg, secretary-treasurer. Dr. Thomas J. Kinsella and Dr. Ralph H. Creighton were named to the board of directors.

* * *

Dr. Kenneth H. Peterson, of Hutchinson, was elected president of the *McLeod County Medical Society* at the annual meeting held in January. He succeeds Dr. J. D. Selmo, of Norwood. Dr. Grant Griebie, Brownton, was elected secretary-treasurer.

Woman's Auxiliary

CHAIRMAN NOTES AIDS FOR HEALTH DAYS

Mrs. Lyman Clay, Chairman

These are busy days for all auxiliary members, but possibly members could find a little time to promote a Health Day in their communities.

Where auxiliaries are very small, such projects as promoting a Health Day may seem too great a task for one or two women. But even an afternoon or evening meeting, which can be planned with the help of the P.T.A. or any local group, will result in a very worthwhile program.

Doctors in the area can be of much help with the planning as they are well acquainted with the health needs in the community or what would be of greatest interest to many.

Civilian defense needs promotion and there are many interesting movies, which may be obtained free of charge. Speakers can be obtained from state, regional, or local headquarters.

Safety in the home, on the farm and in everyday living, can be discussed. This will do much to make each individual more alert in the prevention of unnecessary accidents caused by carelessness.

The Minnesota State Department of Health has a very good film library on subjects of medical and dental health, nutrition, poliomyelitis, public health, sanitation, cleanliness and grooming, babies and children, the human body, eye health, and many others. Health and safety films create interest, and visual education is such an easy way to inform an audience on how to meet and solve many problems. There is also free literature available on many of these subjects.

County nurses are always willing to assist, and it would be a tribute to them to let them tell everyone just what a wonderful service they give in protecting the community by their program in health and prevention of diseases.

May 1 is designated as Children's Day throughout the nation. In many schools, the P.T.A. health chairmen plan a special program for all the children. They give prizes for the best posters in each grade, showing good medical and dental health habits.

This is a project that could be done by one auxiliary member alone, if she is the only auxiliary member in her community. The film library has several films that are of interest to the children. Many are cartoons and do much to help promote good health habits that mothers

Crestview C H Hospital Saint Paul

CRESTVIEW

Typical Semi-private Room

SAINT PAUL'S most complete, exclusive, NEUROPSYCHIATRIC HOSPITAL

Ultra modern facilities and comforts at the lowest cost to patients.

- Occupational therapy and recreational department.
- Complete X-ray and laboratory.
- Electrocardiography—basal metabolism.
- Electroencephalography available.
- All patients' rooms air-conditioned.
- Background music and psychotherapy sound equipment.
- Medically staffed by every neurologist and psychiatrist in Saint Paul.
- Especially trained nursing staff.

Send for photo booklet and rates.

APPROVED by the Minnesota State Medical Association and the Ramsey County Medical Society.

MEMBER of the American Hospital Association.

MEMBER of the Minnesota Hospital Association.

CRESTVIEW HOSPITAL, 145 W. College Ave., Garfield 5841, St. Paul

A non-profit organization.

AT YOUR CONVENIENCE, DOCTOR . . .

you are cordially invited to visit our new and modern prescription pharmacy located on the street floor of the Foshay Tower, 100 South Ninth Street.

With our expanded facilities we will be able to increase and extend the service we have been privileged to perform for the medical profession over the past years.

Exclusive Prescription Pharmacy

Biologicals Pharmaceuticals Dressings
Surgical Instruments Rubber Sundries

JOSEPH E. DAHL CO.
(Two Locations)
100 South Ninth Street, LaSalle Medical Bldg.
ATlantic 5445 Minneapolis

Cook County Graduate School of Medicine

POSTGRADUATE COURSES—1953

SURGERY—Intensive Course in Surgical Technic, two weeks, starting March 16, March 30, April 13
Surgical Technic, Surgical Anatomy and Clinical Surgery, four weeks, starting June 1
Surgical Anatomy and Clinical Surgery, two weeks, starting March 16, June 15
Basic Principles in General Surgery, two weeks, starting March 30
Gallbladder Surgery, ten hours, starting April 20
Surgery of Colon and Rectum, one week, starting April 13
General Surgery, one week, starting May 4
General Surgery, two weeks, starting April 20
Fractures and Traumatic Surgery, two weeks, starting June 15
GYNECOLOGY—Intensive Course, two weeks, starting March 16
Vaginal Approach to Pelvic Surgery, one week, starting March 30
OBSTETRICS—Intensive Course, two weeks, starting March 30
PEDIATRICS—Intensive Course, two weeks, starting April 6
Congenital Heart Disease, two weeks, starting May 18
MEDICINE—Intensive General Course, two weeks, starting May 4
Electrocardiography and Heart Disease, two weeks, starting March 16
Allergy, one month and six months, by appointment
UROLOGY—Intensive Course, two weeks, starting April 13
Ten-Day Practical Course in Cystoscopy, starting every two weeks
DERMATOLOGY—Intensive Course, two weeks, starting May 11

TEACHING FACULTY—ATTENDING STAFF OF COOK COUNTY HOSPITAL

ADDRESS: REGISTRAR, 707 South Wood Street,
Chicago 12, Illinois

sometimes feel they will never make their offspring realize are necessary.

The children would feel greatly honored to have the doctor, the dentist, the town policeman or fireman give them a short talk. The small fry through the teen-ager can be given something they will listen to, look at, and accept. Although much is made over Mother's Day and Father's Day, a Children's Day, even though it is a Health Day, will make them very happy.

The message above is mainly for smaller auxiliaries, but in the larger groups all-day sessions can be planned with less burden to one individual. Help may be obtained from the Minnesota State Department of Health, but they need to be contacted in advance because of the number of places that want their help.

Please remember, a small meeting in a rural community, can be just as successful in alerting interest in happy, healthy living, as in an all-day session involving several counties or a larger town.

The state chairman will help in any way she can to make it easier for anyone. Upon request, program outlines and suggestions, a catalog of health and safety films, health education material are available. The state chairman will also help locate anything needed to make a "Health Day" a success.

RAMSEY COUNTY AIDS NURSE RECRUITMENT

Beginning February 9, and carried through the month of February, a program was presented in each of the fifteen high schools in Saint Paul to inform and interest seniors in the opportunities in the field of nursing, by the Committee on Recruitment of Student Nurses, Fourth District Minnesota Nurses Association.

This program which has been followed for the past four years has been developed with the co-operation of the Directors of Schools of Nursing and the Saint Paul Department of Education.

A panel comprising three student nurses, one of which is from a practical nurse school, one a three-year professional school, and one from a four-year degree school, with a registered nurse as a leader, which tells of the opportunities in nursing is scheduled, through the co-operation of high school principals and counsellors and directors for schools of nursing, for each school.

The Woman's Auxiliary of the Ramsey County Medical Society has done much to support this program and this year is assuming all the responsibility for transportation of panel members to and from the hospitals and the high schools.

All the schools of nursing in the city had Open House March 10, to which high school seniors interested in nursing were invited.

An increasing number of Saint Paul high school graduates are enrolling each year in schools of nursing in Saint Paul.

In Memoriam

WILLIAM HUNTER BARR

Dr. William H. Barr, for many years an outstanding citizen of Wells, Minnesota, died December 27, 1952.

Dr. Barr was born in Carroll, Iowa, December 28, 1879. He attended Drake University and obtained his M.D. degree from the University of Illinois in 1905. After interning at Cherokee State Hospital, Cherokee, Iowa, he opened an office in Wells in 1905.

Dr. Barr had various interests and activities. For eight years, he was a member of the State Board of Health, for twelve years a member of the State Board of Medical Examiners, and was mayor of Wells for four consecutive terms from 1911 on. For years he served as a member of the Wells School Board and was president of the Peoples State Bank.

After serving his community for forty-five years, he was tendered a banquet by the Boy Scouts, Cub Scouts, Campfire Girls and the Blue Birds.

He was a member of the Methodist Church and the Masonic, Elks and Woodmen lodges. He was also a member of the Blue Earth Valley Medical Society, the Minnesota State Medical Association and the American Medical Association.

Dr. Barr is survived by his wife, Stella; two sons, Dr. James Barr, 1st Lt. U. S. Air Force, and William H. Barr, Jr., of Wells; three daughters, Mrs. G. S. Flanagan, Emmons, Minnesota, Mrs. J. M. Anderson, Chicago, and Mrs. K. R. Thorson, Albuquerque, New Mexico.

THEODORE H. DEDOLPH

Dr. Theodore H. Dedolph of Braham, Minnesota, died unexpectedly December 22, 1952 at Veterans Hospital, St. Cloud. He had been a patient there since 1941.

Dr. Dedolph was born in Saint Paul, March 10, 1889. He attended Mechanic Arts High School in Saint Paul and received his medical degree from the University of Minnesota in 1912. He began practice in Braham that same year as an associate of the late Dr. Charles Swenson.

In 1918, he enlisted in the Medical Corps and served a year in France during World War I. Following his discharge from service, he went to Oakes, North Dakota, but in 1922 returned to Braham, where he practiced until his retirement.

In 1922 Dr. Dedolph was married to Erica Erickson of Braham, who survives him, together with a son, Dr. Theodore Dedolph, Jr. The late Dr. Karl Dedolph of Saint Paul was a brother. Another brother, Frederick, of Fullerton, California, and a sister, Mrs. Edwin A. Hendricks, of Minneapolis, also survive.

Dr. Dedolph had been an affiliate member of the Minnesota State Medical Association since his retirement. He was a Mason and life member of the Zuhrah Temple, Minneapolis, and a member of the Legion of Honor of the Shrine.

C. F. HOLST

Dr. C. F. Holst, a practicing physician in Little Falls, Minnesota, from 1903 to 1947, died January 12, 1953 at the age of seventy-eight.

Dr. Holst was born in Goodhue County, Minnesota, February 8, 1874. He obtained his medical degree at the University of Minnesota in 1901 and attended the Chicago Postgraduate School and the Chicago Eye and Ear Clinic in Chicago.

After practicing at Hendricks, Minnesota, from 1901 to 1903, he located at Little Falls, where he was associated with his brother, Dr. J. B. Holst.

During World War I, Dr. Holst served in the medical corps of the army.

In June, 1920, he was married to Regina Werner of Breckenridge. His wife and two daughters, Mrs. H. R. Carney of Edina and Mrs. J. W. Cullen of Cleveland, Ohio, survive him. A brother, Dr. John B. Holst of Little Falls, also survives him.

Dr. Holst was a member of the Upper Mississippi Medical Society, the Minnesota State Medical Association and the American Medical Association.

LINWOOD D. KEYSER

Dr. Linwood D. Keyser, former fellow in pathology of the Mayo Foundation, died of chronic nephritis and rheumatic heart disease on October 12, 1952.

Dr. Keyser was born on September 26, 1893, at Victoria, Texas. He received the degree of B.A. in 1914 from the University of Virginia, of M.D. in 1918 from Johns Hopkins University, and of M.S. in Pathology in 1921 from the University of Minnesota. He was a first lieutenant in the Medical Reserve Corps of the United States Army during World War I. He was an intern at Johns Hopkins University Hospital for one year, was assistant resident surgeon at the Peter Bent Brigham Hospital, Boston, for six months, and was resident surgeon at the New York Post-Graduate Hospital for six months. He entered the Mayo Foundation as a fellow in pathology in September, 1920; his services included pathology, experimental surgery, general surgery and orthopedic surgery, following which he left the Mayo Foundation in July, 1923. He practiced general and urologic surgery at Roanoke, Virginia, where he was attending surgeon and surgical pathologist at the Roanoke Hospital and consultant surgeon to Gill Memorial and Burrell Memorial hospitals.

Dr. Keyser was certified as specialist in urology by the American Board of Urology, was a fellow of the American College of Surgeons and a member of the American Medical Association, the American Urological Association, the Johns Hopkins Surgical Society, the American Association for the Advancement of Science, the Roanoke Academy of Medicine, the Tri-State Medical Society of Virginia and the Carolinas, the Southern

Medical Association, the Southwest Virginia Medical Society, the Southeastern Surgical Congress, the American Association of Genito-Urinary Surgeons, the Alumni Association of the Mayo Foundation and Sigma Xi.

CARL L. LARSEN

Dr. Carl L. Larsen, well known eye, ear, nose and throat specialist in Saint Paul, died suddenly of a heart attack on January 29, 1953, at his home.

Dr. Larsen was born at Menomonie, Wisconsin, April 27, 1881. He graduated from Hamline medical school in 1904 and interned at the City and County (Ancker) Hospital in Saint Paul in 1904-05. He practiced at Buffalo, Minnesota, from 1905 until 1910 and then took postgraduate work in 1910-11. Later, in 1921 and again in 1927, he took further postgraduate work in London.

He was president of the Ramsey County Medical Society in 1924, the year the American College of Physicians met in Saint Paul. He was a member of Phi Rho Sigma, undergraduate medical society, the Rotary Club, the Town and Country Club and the Athletic Club.

Dr. Larson lost his wife a few years ago. He is survived by his daughter, Mrs. Gilbert Brown, and his son, Frank E., of North Hollywood.

Dr. Larsen had an extensive practice and a host of friends. Besides being an able specialist and a member of the American College of Surgeons, he played golf until a few years ago and was a bridge enthusiast.

JOHN SILLIMAN MACNIE

Dr. John S. Macnie, well-known specialist in eye, ear, nose and throat diseases in Minneapolis for many years, died January 30, 1953. He was seventy-eight years of age.

Dr. Macnie was born at Newburgh, New York, May 21, 1874. He received a B.A. degree at the University of North Dakota, Grand Forks, in 1893 and his M.D. degree from the College of Physicians and Surgeons at Columbia, New York, in 1896.

After taking postgraduate work in London and Vienna, he returned to Minneapolis in 1904 and joined the medical staff of the University of Minnesota. He retired as associate professor of Ophthalmology from the University staff in 1944.

Mrs. Macnie died four years ago. Dr. Macnie is survived by two sons, John P., of New York, and Robert O., of Minneapolis.

Dr. Macnie was a member of the Hennepin County Medical Society, the Minnesota State Medical Association and the American Medical Association.

MANFORD O. OPPEGAARD

Dr. M. O. Oppegaard, an outstanding physician in the state, died January 22, 1952.

Dr. Oppegaard was a founder of the Northwestern Clinic at Crookston and as its president was largely responsible for its growth from a staff of two physicians

The Birches Sanitarium, Inc.

2391 Woodland Avenue
Duluth 3, Minnesota

A hospital for the care and treatment of Nervous and Mental disorders. Quiet, cheerful environment. Specially trained personnel. Recreational and occupational therapy.

Dr. L. R. Gowan, M.D., M.S., Medical Director

HOMEWOOD HOSPITAL is one of the Northwest's outstanding hospitals for the treatment of Nervous Disorders—equipped with all the essentials for rendering high-grade service to patient and physician.

Operated in Connection with
Glenwood Hills Hospitals

HOMEWOOD HOSPITAL
Corner Penn and Plymouth Avenues North
Minneapolis Minnesota

WHERE
ALCOHOLICS
ACHIEVE
INSPIRATION
FOR
RECOVERY

Where gracious living, a homelike atmosphere and understanding companionship contribute to successful rehabilitation.

200 acres on the shores of beautiful Lake Chisago

The methods of treatment used at the Hazelden Foundation are based on a true understanding of the problem of alcoholism. Among the founders of the nonprofit Hazelden Foundation are men who have recovered from alcoholism through the proved program of Alcoholics Anonymous and who know the problems of the alcoholic. All inquiries will be kept confidential.

HAZELDEN FOUNDATION

Lake Chisago, Center City, Minn. Telephone 83

---

and one dentist to a personnel of twelve physicians and twenty-eight lay members. The clinic was established in 1920 when Dr. Oppegaard came to Crookston.

Dr. Oppegaard was born September 8, 1885, at Taylor, Wisconsin. He obtained a B.S. degree from the University of Minnesota in 1908 and his M.D. degree in 1910. After interning at St. Luke's Hospital in Saint Paul, he took postgraduate work at the Polyclinic in Chicago, at the New York Postgraduate Hospital, and at the Massachusetts General Hospital in Boston.

Before establishing the Northwestern Clinic in 1920, he practiced in New London, Minnesota, for seven years and in Minneapolis for three years.

Dr. Oppegaard was active in medical organizations, having been president and secretary of both the Red River Valley Medical Society and the Northern Minnesota Medical Association. He was also interested in the Elks, the Shrine and the Rotary Club. From 1946 to 1952, he served as mayor of Crookston following his retirement from practice.

Surviving are his widow, a son, Manford M., of Winston-Salem, North Carolina; a daughter, Mrs. George Leichsenring of Oak Ridge, Tennessee, and two brothers, Dr. C. L. Oppegaard of Crookston and M. M. Oppegaard of Grand Forks, North Dakota. A sister, Mrs. O. E. Locken of Minneapolis, also survives him.

Dr. Oppegaard was a member of Sigma Xi and Alpha Omega Alpha scientific societies and was for many years a member of the Minnesota State Medical Association and the American Medical Association.

JOHN E. PLUNKETT

Dr. John E. Plunkett, former fellow in medicine of the Mayo Foundation, died of cardiac insufficiency on January 11, 1953, in Ottawa, Ontario, Canada.

Dr. Plunkett was born on April 17, 1900, at Peterborough, Ontario. He received the degree of Phm.B. in 1922 from the University of Toronto and the degree of M.D., C.M. in 1930 from Queen's University, Kingston, Ontario. He was an intern at the Ottawa Civic Hospital in Ottawa in 1930 and 1931 and resident physician there in 1931 and 1932. Dr. Plunkett entered the Mayo Foundation as a fellow in medicine on July 1, 1932, and left April 1, 1935, at which time he returned to Ottawa to engage in the practice of general medicine. He was an assistant professor of clinical medicine at Queen's University and was on the staff of the Ottawa Civic Hospital until the time of his death.

Since 1945, Dr. Plunkett had been an honorary secretary of the Royal College of Physicians and Surgeons of Canada. He was an officer of the Militia Reserve of Canada and a member of the Montreal Medical-Chirurgical Association, the New York Academy of Sciences, the Ontario Medical Association, the American Heart Association and the Alumni Association of the Mayo Foundation.

Of General Interest

Two brothers, **Dr. George R. Smith,** of Hutchinson, and **Dr. Ralph Smith,** of Minneapolis, were called to military service in January within a week of one another.

Dr. George R. Smith, a graduate of the University of Minnesota Medical School, 1946, for the past three and one-half years has been in practice in Hutchinson with **Dr. E. W. Lippmann.** Dr. Smith reported to Gunter Air Force Base, January 15, for service with the Air Force.

Dr. Ralph Smith, a graduate of the University of Minnesota Medical School, 1945, served two years with the navy after completing medical school. He did research work at the University of Minnesota until 1951, and was in charge of medicine at Ancker Hospital during 1951 to 1952. Recently he has been on the staff of the Veterans Hospital at Ft. Snelling and the University of Minnesota. Dr. Smith reported to Jamaica, New York, January 7, where he will be in charge of Naval Research at St. Albans Hospital.

Dr. Dan W. Heubert, Halstead, Kansas, filled the vacancy in Hutchinson left by Dr. George R. Smith. Dr. Heubert recently completed a tour of duty with the Air Force.

* * *

Dr. I. L. Oliver, accompanied by Mrs. Oliver, left Graceville in January for a two-month trip through several South American countries. Dr. Oliver is one of 200 members of the American College of Surgeons who attended the inter-American session of the college, held in Sao Paulo, Brazil, February 13-18.

* * *

Dr. W. E. Hall, of Maple Lake, has been selected as one of the civil defense directors and physicians of Wright County.

* * *

Dr. Nelson J. Bradley, superintendent of the Willmar State Hospital, was a guest panelist on a KSTP-TV show Sunday, January 11. Dr. Bradley and four other panel members (Rev. Forrest Richeson, of Minneapolis; James Otis, Saint Paul municipal judge, and Lynn Carroll, managing director of the Hazeldon Foundation) discussed the problems of alcoholics. The program was the first in a series of such programs and was entitled, "The Hidden Man."

* * *

A bronze plaque in memory of **Dr. O. W. Anderson,** former Luverne physician, was given to the Luverne Hospital by Alan C. McIntosh, editor and publisher of the *Rock County Star-Herald,* recently.

* * *

Dr. Richard L. Varco, professor of surgery at the University of Minnesota, spoke to a joint group of physicians and nurses, January 8, at the first of eight medical sessions sponsored by the Blue Earth Valley Medical Society, the Southern Dental District, Fifth District, Minnesota Nurses Association, and District two of the Minnesota Department of Health. Dr. Varco's topic for the evening was "Lung Cancer."

* * *

Dr. Henry P. Staub has reopened his office at 2300 Central Avenue, Minneapolis, after serving twenty-two months in the armed forces. Most of Dr. Staub's military service was in Germany.

* * *

Dr. A. B. Hayles, of the department of pediatrics at the Mayo Clinic, addressed the Tri-County Medical Society at an evening meeting, January 14. Dr. Hayles spoke on "Problems of Endocrinology in Childhood."

* * *

Dr. Wallace P. Ritchie, Saint Paul, spoke at the dedication ceremonies of the Macalester College new Winton Health Center, February 8. Dr. Ritchie is a Macalester trustee.

* * *

Dr. Vincent Paciotti, formerly of Perham, was released from military service, February 1, and will live in Minneapolis. Dr. Paciotti recently returned from Japan and has accepted a residency in radiology at the University of Minnesota Hospitals.

* * *

Dr. Frank Farley, Cincinnati, Ohio, began practice in Hibbing with the Adams Clinic in January.

* * *

Dr. D. P. Anderson, Austin, spoke to the members of the Austin Rotary Club at the February meeting on "What the Patient Should Know."

* * *

Dr. McLemore Bouchelle, formerly resident surgeon at Columbia Presbyterian Medical Center, New York, New York, joined the staff of the East Range Clinic at Virginia, January 20. Dr. Bouchelle was graduated from the Harvard Medical School in 1943. He interned at Columbia Prebyterian Medical Center in New York and then served in the army for twenty-seven months in the American and Pacific theatres.

Dr. Bouchelle's appointment to the staff brings the total number of doctors at the clinic to four. The other doctors are **Dr. J. Armond Malmstrom, Dr. Paul Reed,** and **Dr. John Indihar.**

* * *

Dr. Joseph. M. Ryan, chief of medicine at St. Joseph's Hospital, Saint Paul, took a month's course in techniques of using radioscopes at the Oak Ridge Institute of Nuclear Studies, in January.

* * *

Dr. Don Hoganson, of Bemidji, recently returned from medical duty with the army in Korea, presented a front line picture to members of the Headwaters Shrine Club, at the February meeting. Dr. Hoganson showed slides of pictures he took while on duty in front line action and during the Koje Island

When Is A Dollar A Dollar?

It is quite common today to hear about a "50c dollar"—a dollar that buys what only 50c would buy in the past.

Many people, however, have not heard about the "60c dollar"—a dollar of investment income that shrinks to 60c after income taxes are paid.

Two men in similar financial circumstances ($12,000 taxable income bracket for example) are each receiving income from investments:

One man receives a "60c dollar."

The other receives a "$1.00 dollar."

WHY?

Income from corporate bonds and stocks, government bonds, contracts for deed, mortgages and most other investments is subject to our present Federal Income tax.

Income from Municipal Bonds is exempt from such tax.

ARE YOU INTERESTED IN RECEIVING A "$1.00 DOLLAR" FROM YOUR INVESTMENTS?

Write or call for descriptive circulars of municipal bonds we are currently offering.

JURAN & MOODY
MUNICIPAL SECURITIES EXCLUSIVELY

TELEPHONES:
GArfield 9661
Prior 6423

93 E. SIXTH STREET
ST. PAUL 1, MINNESOTA

"Compound 76" prisoner-of-war outbreak of last summer.

* * *

Dr. F. L. Bregel, of St. James, has closed his office there and accepted a position with the Veterans Administration in Saint Paul. Dr. Bregel started working with the Veterans Administration, January 1.

* * *

Dr. Frederick J. Kottke, head of the department of physical medicine at the University of Minnesota Hospitals, directed a one-day conference on poliomyelitis at the University Center for Continuation Study, January 15. **Dr. Gaylord W. Anderson,** director of the School of Public Health at the University, outlined recent trends in immunization against poliomyelitis.

* * *

Dr. Lewis Thomas, professor of pediatrics and medicine at the University of Minnesota Medical School, was awarded $1,900 by the Rockefeller Foundation, January 22. The fund was awarded for study in Europe. Dr. Thomas will leave early in April for a two-month visit to laboratories in Great Britain and on the Continent where work on rheumatic fever and related problems is being carried on.

* * *

Dr. Lewis Hanson, of Frost, spoke on poliomyelitis at the January meeting of the Frost Parent Teachers Association.

Dr. Lloyd C. Gilman, of Willmar, left January 15, for Madison, Wisconsin, where he will spend a year as a surgical assistant to Dr. Arnold Jackson of the Jackson Clinic. Dr. Gilman has been in practice since 1938 when he was graduated from the University of Minnesota Medical School—he first located in Osceola, Wisconsin, then at Atwater from 1938 to 1941, until he was called into the armed forces. After four and a half years of army medical corps service, Dr. Gilman began practice in Willmar. In 1949 he became associated with the Lakeland Medical Center group of doctors which was established that year. Dr. Gilman plans to return to Willmar after one year's stay in Madison.

* * *

Dr. C. R. Openshaw and **Dr. N. W. McQuay** of the Mayo Foundation, recently joined the staff of the Nopeming Sanatorium where they will be affiliated for several months.

* * *

Dr. Ivan D. Baronofsky, associate professor of the University of Minnesota Medical School, was a guest consultant at the first of two clinical conferences for physicians of the Wright County Medical Society on cancer and heart disease at Cokato in January. These pathological conferences (the second to be held April 7) are sponsored by the Minnesota Department of Medicine of the University of Minnesota, the Minnesota Medical Association, the Minnesota Cancer Society, and the Minnesota Heart Association.

* * *

A $55,000 remodeling and construction program will begin on **Mineral Springs Sanatorium,** Cannon Falls, this year. Eight counties have participated in providing funds for the work.

* * *

Dr. Mancel T. Mitchell was named the new president of the Minneapolis War Memorial Blood Bank, in January. **Dr. Karl S. Klicka,** Hadlai Hull, and **Dr. R. F. McGandy** were elected vice presidents by the board of directors.

* * *

The new Heisler Clinic at 6224 Lyndale Avenue S., Richfield, was completed and opened in late January. Heading the clinic is **Dr. John J. Heisler.** Staff members include **Dr. James Arms, Dr. Alex Ratelle,** Dr. Les Nelson (dentist), and Neil Johnson (pharmacist). Plans for the building were drawn up by Dr. Heisler's brother, Robert P. Heisler.

* * *

Dr. Harold S. Diehl, dean of medical sciences at the University of Minnesota, took part in a panel discussion of the impact of national defense on medical education at the Forty-ninth Annual Congress on Medical Education, held in Chicago, February 8-10.

* * *

Dr. A. B. Baker, head of the neurology department at the University of Minnesota Medical School, addressed the second annual meeting of the Minnesota chapter of the National Mutiple Sclerosis Society, held January 21, at St. Luke's Hospital in Duluth. Dr. Baker spoke on new trends in diagnosis and treatment of multiple sclerosis.

* * *

Dr. Leo G. Rigler, professor of radiology at the University of Minnesota, has been named to a team of fifteen medical scientists who went to India in February to advise doctors there on the latest medical knowledge. Dr. Rigler, who previously went on a similar mission to Japan, is one of five Americans on the team. Others are Dr. Joseph C. Aub and Dr. John E. Gordon, of Harvard; Dr. Samuel Z. Levine, Cornell University, and Dr. Stuart C. Cullen, University of Iowa. The team was sent at the request of the Indian Health Ministry and jointly sponsored by the United Nations World Health Organization and the Unitarian Service Committees.

* * *

Dr. Howard R. Hartman, Rochester, who recently retired as senior consultant of the Mayo Clinic's clinical section, became a consulting physician to the Chrysler Corporation in January.

* * *

Dr. Mary C. Ghostley, director of Lake Julia Sanatorium at Puposky for twenty-three years, was honored at a surprise banquet, January 14, celebrating her retirement. Dr. Ghostley, a graduate of the University of Minnesota Medical School in 1909, established her first practice in Blackduck but soon moved to International Falls where she practiced for twenty years. "Dr. Mary," as she is known, retired because Lake Julia was closed in January. The number of tuberculosis cases has been cut to a point where the smaller institutions not equipped for some of the modern treatments of the disease, are being closed. Lake Julia Sanatorium, after thirty-six years of service to its three-county (later four) area, was the fifth of the fourteen small sanatoriums in the state to close.

* * *

Dr. J. K. Butler, Cloquet, was the featured speaker at the organizational meeting of the county committee of the American Heart Association held at the Northeastern Hotel at Cloquet, January 15. The fund drive for the Heart Association opened February 1.

* * *

Dr. John Indihar, Virginia, was in charge of preschool clinics held January 20, at Mountain Iron School, Parkville School and the West Virginia School. Mrs. Lillian Fuller, school nurse, made arrangements for the clinics.

* * *

The January issue of the *Mississippi Valley Medical Journal* (Quincy, Ill.) contains all the papers read at the recent annual meeting of the American Medical Writers' Association. There are papers by **Dr. Walter C. Alvarez,** formerly of Minnesota, and Prof. Theodore Peterson, University of Illinois, Prof. J. Linwood Cutler, University of Missouri, Dr. Harold Swanberg, Editor, *Mississippi Valley Medical Journal,* and Dr. W. W. Bauer, Editor of *Today's Health.* The first four comprise an interesting Symposium on Medical Writing conducted at the St. Louis meeting. The two winning essays in the twelfth annual essay

AUTHORIZED DEALER
for
A.C.M.I. Products

Cystoscopes
Resectoscopes
Telescopes
Cutting Loops
Catheters
Urological Accessories

We solicit your mail and telephone orders.

C. F. ANDERSON CO., INC.
901 MARQUETTE AVE.
MINNEAPOLIS, MINN.

Complete Line of Medical Instruments and Equipment.

Minneapolis—ATlantic 6508 St. Paul—ZEnith 2055

contest, Mississippi Valley Medical Society, by Dr. Wallis L. Craddock, Salt Lake City, and Dr. Lawrence L. Craven, Glendale, California, are also included.

The Symposium on Medical Writing has been incorporated in a twenty-four-page reprint which will interest everyone concerned with medical writing. Free copies are available by addressing Harold Swanberg, M.D., Secretary, American Medical Writers' Association, 209-224 W. C. U. Building, Quincy, Illinois.

* * *

Dr. and Mrs. Robert D. Thielen and their daughters, Janet and Judith, of St. Michael, recently returned from a month's trip through Florida and a cruise to the West Indies. They sailed December 22 on the SS Nuevo Dominicano for Nassau Dominican Republic and Haiti.

* * *

Dr. J. L. Bader, of Slayton, attended the short course in anesthesiology at the University of Minnesota Continuation Center, in January.

* * *

Two specialists who recently joined the St. Louis Park Medical Center are **Dr. Robert L. Koller** (eye, ear, nose and throat), of Edina, and **Dr. Titus P. Bellville** (gynecology and obstetrics) of Minneapolis. Dr. Bellville replaces **Dr. Alex Barno** who was recalled to active duty with the U.S. Navy.

Dr. R. Gordon Douglas, Chief of the New York Lying-In Hospital, was a recent house guest of **Dr. and Mrs. William B. Stromme,** of Minneapolis.

* * *

Dr. James Rogers Fox of the University of Minnesota Medical School faculty, spoke on "Inside the British Health Plan," at a luncheon meeting of the Ramsey County Medical auxiliary, January 26.

* * *

Dr. C. W. Mayo, of Rochester, was re-appointed as a member of the University of Minnesota Board of Regents, in January. Dr. Mayo was appointed a regent of the University in February, 1951, after the resignation of Mr. A. J. Lobb, of Rochester, from the post.

* * *

Dr. C. H. Sherman, of Bayport, and **Dr. W. C. Bernstein,** formerly of Stillwater, joined the staff of the new Hudson Memorial Hospital, Hudson, Wisconsin, in January.

* * *

Dr. Winchell M. Craig, Mayo Clinic neurosurgeon and professor of neurosurgery in the Mayo Foundation, was recently elected president of the Association of Military Surgeons of the United States.

* * *

Dr. Donald W. Hastings, Professor and Head of the Department of Psychiatry and Neurology, University of Minnesota Medical School, attended a meeting in Paris, February 23-25, under the auspices of The Advisory Group for Aeronautical Research and Development of the NATO. He is chairman of the Aero-Medical Panel of the United States Air Force Scientific Advisory Board and will present a paper on Psychiatric Selection of combat flying personnel.

* * *

Dr. A. C. Aufderheide, of Minneapolis, spoke at the Inter-Urban Academy of Medicine meeting, held January 21 at the Spalding Hotel, Duluth.

* * *

Dr. Henry F. Helmholz, Rochester, chairman of the national Parent Teachers Association's health committee, announced that the national Congress of Parents and Teachers is asking its local groups to promote fluoridation of community water supplies.

* * *

Dr. George Heine, of the Little Falls Clinic, was recalled to active duty with the Navy, in January. He reported to Coronado, California, Navy amphibious base, February 4. **Drs. G. M. A. Fortier** and **Milo Hansen** will take care of Dr. Heine's practice in his absence.

* * *

Dr. C. F. Burnett, of the Northwest Clinic of Crookston, was guest speaker January 30, at the Eldred Parent Teachers Association meeting. Dr. Burnett spoke on polio, its treatment and prevention.

* * *

Dr. Robert P. Pierce, formerly of Renville, began practice in Danube, in January.

COMPLETE OPHTHALMIC SERVICE FOR THE PROFESSION

Benson
OPTICAL COMPANY

Laboratories in
Minneapolis and
Principal Cities of
Upper Midwest

Since 1913

Dr. J. T. Saidy left Rochester recently to begin private practice at San Mateo, California. Dr. Saidy completed his fellowship in the Mayo Foundation in January.

* * *

Dr. O. W. Roberts, of Owatonna, spoke on "Heart Disease" to a group in Medford, where the first of four programs in Steele County, under the auspices of the Minnesota Heart Fund, was held.

* * *

Dr. E. V. Allen, consultant in medicine at the Mayo Clinic, and **Dr. John Kirklin,** consultant in surgery, were featured speakers at the quarterly dinner for new fellows of the Mayo Foundation, held January 29, in Balfour Hall of the Mayo Foundation House. The evening's program included singing by the Fellows chorus directed by **Dr. Richard Sholl** accompanied by **Dr. William Parsons. Dr. Clayton Klakeg,** vice president of the Fellows Association, was master of ceremonies.

* * *

Dr. Wallace E. Herrell, a member of the permanent staff of the Mayo Clinic since 1938 and noted for his early work with penicillin, will leave Rochester in August to enter the section of medicine in the Lexington Clinic, Lexington, Kentucky.

Dr. Herrell began his research on penicillin in 1941, after Dr. H. W. Flory of Oxford, England, one of the first to purify penicillin for clinical use, visited the clinic. With **Dr. Luther Thompson** and **Dr. E. N. Cook,** Dr. Herrell wrote the first clinical report on the successful use of penicillin in the treatment of gonorrhea. Dr. Herrell's particular fields have been tissue regeneration, chemotherapy and experimental and clinical studies of antibiotic substances.

* * *

Dr. William J. Lick has opened an office at 244 Lowry Medical Arts Building, Saint Paul, for the practice of Internal Medicine. He is a Diplomate of The American Board of Internal Medicine.

* * *

Richard L. Engwall, of Winthrop, was selected as the recipient of the first Minnesota State Medical Association rural medical student scholarship. This consists of $1,000 a year for four years and in return the recipient has promised to practice medicine in a Minnesota town of 5,000 or less. The presentation of the scholarship was made by **Dr. F. J. Elias,** chairman of the Scholarship Selection Committee, to Mr. Engwall at the annual county officers meeting sponsored by the MSMA which was held at the Saint Paul Hotel, January 17, 1953. It is felt that this scholarship and additional ones planned for the near future constitute one way in which the profession of the state can take part in a positive fashion in helping to secure more physicians for rural areas.

* * *

Dr. Ivan Baronofsky, director of surgical postgraduate study at Ancker Hospital, Saint Paul, addressed a group of private duty nurses on thoracic surgery, February 3. The occasion was a one-day conference on nursing poliomyelitis, chest surgery

North Shore
Health Resort
Winnetka, Illinois

*on the Shores of
Lake Michigan*

A completely equipped sanitarium for the care of
nervous and mental disorders, alcoholism and drug addiction
offering all forms of treatment, including electric shock.

SAMUEL LIEBMAN, M.S., M.D.
225 Sheridan Road
Medical Director
Phone Winnetka 6-0211

and laryngectomy patients, held at the Lowry Medical Arts Building.

* * *

Dr. L. E. Steiner, of Albert Lea, spoke to the local Rotary Club, February 6, explaining functions of the American Medical Association, the state medical group and the county organizations.

* * *

Dr. Charles M. Jessico, Duluth, spoke on "Psychiatry from Catholic Doctors' Viewpoint," at a breakfast meeting of the Holy Name Society of Our Lady of the Rosary Catholic Parish, Sunday, February 8.

* * *

Dr. R. H. Wilson, of Winona, was called upon to attend Miss America (Miss Neva Jane Langley) when she became ill at Winona during the Winona Winter Carnival.

* * *

Dr. Edward Banner, of the Mayo Clinic, spoke to the guests at the annual father and son fellowship dinner and program of the First Methodist Church, Rochester, February 3. Dr. Banner spoke on developments in outer space travel, man-made satellites, et cetera.

* * *

Dr. Herb L. Huffington, of Montevideo, plans to begin practice in Waterville about April 1.

* * *

Dr. Helen Fukashima, instructor at Miller Hospital, Saint Paul, served as the choreographer for Bethany College's production of the operetta "The Mikado," to be given at Mankato. Dr. Fukashima, although born in Minneapolis, moved to Japan as a small girl and lived there until 1948. She was graduated from Tokyo's Women's Medical School.

* * *

Dr. Malcolm M. Hargraves, of the Mayo Clinic, addressed a group of farmers, businessmen and their wives attending the annual dinner meeting of the Steele County Soil Conservation District, held in Blooming Prairie in January. Dr. Hargraves talked on the rise and fall of civilizations and their relation to agriculture.

* * *

Dr. Howard Bosland, of Willmar, spoke at the West Central Minnesota Dental Study Club, held at the Lakeland Hotel in Willmar, February 5. Dr. Bosland's subject was "The Dentist's Health."

* * *

Poliomyelitis, wonder drugs, and the plight of the aging, were the special topics under discussion during the tenth annual Community Health Day in the Radisson Hotel, February 6. Speakers and panel members from the medical profession included **Dr. Gaylord Anderson,** Director of the University of Minnesota School of Public Health; **Dr. Wesley Spink,** professor of medicine at the University of Minnesota, and **Dr. Reynold A. Jensen,** Hopkins.

The women's auxiliaries to the Hennepin County Medical and Minneapolis District Dental Societies sponsored the event.

Dr. Leonard B. Moyer, formerly of Lake Preston, South Dakota, began practice with **Dr. G. F. Engstrom** in Belgrade Community Hospital, in February. Dr. Moyer has served for four years as surgeon with the United States Public Health Service and two years with the Army Medical Corp.

* * *

Dr. George E. Williams, of the Rochester-Olmsted County public health center, showed and discussed the film, "Fears of Children," at a meeting of the Northrop Mother's Club of Rochester.

* * *

Dr. Hamline Mattson, Minneapolis, officiated as president of the Minneapolis Surgical Society at the thirty-first annual Founders' Day banquet at the Minneapolis Club, February 4. Guest speaker was Dr. Karl Myer, chairman of the division of surgery at Cook County Hospital, Chicago.

* * *

Dr. Arthur C. Kerkhof, and **Dr. Carleton B. Chapman,** associate professors of medicine at the University of Minnesota, spoke at a Blue Earth Valley Medical Society Seminar group, February 6. This was the fourth seminar session; the seminars are sponsored by the Blue Earth Valley Medical Society, Southern Dental District, Minnesota Nurses Association, District 5, and the Minnesota Department of Health, District 2.

For

Professional Supplies

and

Service

BROWN & DAY, INC.

St. Paul 1, Minnesota

Dr. Victor Johnson, director of the Mayo Foundation, participated in the program of the forty-ninth annual Congress on Medical Education and Licensure, held in Chicago, February 8 to 10.

* * *

The Dr. George J. Tweedy Memorial Fund, established by friends and the family of the physician following his death July 20, 1952, has been used to purchase equipment for Winona General Hospital. Dr. Tweedy spent fifty-nine years in medical practice in the Winona vicinity. His two sons, **Dr. Robert Tweedy** and **Dr. John Tweedy,** have offices in the city and are members of the medical staff of the hospital.

* * *

Dr. Louis A. Buie, of Rochester, senior consultant in the Section of Proctology of the Mayo Clinic, has been asked to serve as a member of the National Foundation for Infantile Paralysis, Inc. The term runs from January 1, 1953, to December 31, 1955. Dr. Buie has been a member of the Committee on Professional Education and Publications of the national poliomyelitis group.

* * *

Dr. C. W. Moberg, of Detroit Lakes, attended a two-week postgraduate course in surgery, in February, held at the Cook County Hospital, Chicago.

* * *

Dr. Charles W. Mayo and **Dr. Raymond J. Jackman,** of the Mayo Clinic, participated in the first inter-American session of the American College of Surgeons, held February 9-12, at Sao Paulo, Brazil.

* * *

Dr. P. J. Schneider, of Adams, held open house in his new office building, in February.

* * *

Dr. S. G. Knight, of Randall, although officially retired three years ago after forty years of practice in the community, still carries on a limited practice from a small office in his home. The eighty-three-year-old doctor came to Randall in 1910 from Ontario, Canada. Dr. Knight was a classmate of Dr. Allan R. DaFoe of Callander, Ontario—the doctor who delivered the Dionne quintuplets of Canada—and has quadruplets in his own family. The Hargreave quadruplets of Canada were born to a grandniece of Dr. Knight.

* * *

Two new doctors, **Dr. J. Roger Nickerson,** Heron Lake, and **Dr. Neil Nickerson,** Thief River Falls, joined **Dr. R. C. Hunt** and **Dr. Robert S. Hunt** in their practice in the Fairmont Clinic, in late February.

* * *

Dr. D. R. Philp, of Windom, was entertained at a farewell dinner given by the nursing staff of the Windom Hospital, February 9. Dr. Philp left in February for a tour of active duty with the armed forces. Among community members attending the dinner were **Dr. H. P. Basinger,** Windom, and **Dr. Robert Sawtell,** of Jeffers.

Dr. Percy T. Watson, Minnesota Department of Health, has retired after serving the people of this state for seventeen years. The preceding twenty-seven years Dr. Watson spent doing public health work in China. One of his outstanding achievements during his missionary physician work was the organization of expeditions to stop recurrent epidemics of bubonic and pneumonic plague.

Dr. Watson returned to the United States in 1934 and a year later he joined the health department. He received his medical degree from Johns Hopkins in 1907 and his M.P.H. from Harvard. Dr. Watson did postgraduate work at the Mayo Clinic. Two of his children are physicians—Dr. R. Janet Watson, of Brooklyn, New York, and **Dr. Theodore Watson,** of Saint Paul.

* * *

Dr. Henry E. Michelson, of Minneapolis, delivered two professorial lectures before the New York University Postgraduate Medical School in New York, January 29 and 30. The subjects of the lectures were the Lupus Erythematosus Problem and the Pathogenesis of Sarcoidosis.

* * *

Dr. Merrill D. Chesler, of Minneapolis, was the principal speaker at the meeting of the Renville County Medical Society, held at Olivia, February 17. The title of his talk was "The Use of Skin Grafts and Flaps."

HOSPITAL NEWS

Dr. V. D. Thysell of Hawley, was elected president of the medical staff of **St. Ansgar Hospital** at Moorhead, at the annual meeting in January. Dr. E. W. Humphrey, Jr., Moorhead, was elected vice president, and Dr. Carl Simonson, re-elected secretary. Dr. James Oliver was the retiring president. Four doctors were cited for attendance records at the monthly meetings, including Dr. Simonson, Dr. H. G. Rice, Dr. Thysell, and Dr. Oliver.

* * *

Dr. Leonard A. Lang has been elected chief of staff at **St. Mary's Hospital,** Minneapolis, succeeding Dr. Leo Culligan. Dr. Horatio Sweetser was elected vice president and Dr. James Trow, secretary-treasurer. The medical advisory committee includes the officers and Dr. T. J. Kinsella, Dr. Maurice McInerny, and Dr. Willard D. White.

* * *

Dr. Olga S. Hansen Litzenberg, Minneapolis, was elected chief of staff of **Eitel Hospital,** Minneapolis, at the annual meeting in January. Dr. G. T. Schimelpfenig was elected assistant chief of staff, and Dr. O. L. Zahrendt, secretary-treasurer. Honorary life memberships to the staff were presented to Drs. S. Marx White, William H. Condit, Arthur C. Strachauer, Alfred T. Baker, Hugh J. Tunstead, and Henry L. Ulrich.

* * *

Dr. Kenneth W. Teich was elected chief of staff at **Miller Memorial Hospital,** Duluth, at the annual

ACCIDENT • HOSPITAL • SICKNESS

INSURANCE

For Physicians, Surgeons, Dentists Exclusively

ALL PREMIUMS COME FROM — PHYSICIANS SURGEONS DENTISTS — ALL CLAIMS GO TO

$5,000 accidental death Quarterly $8.00
$25 weekly indemnity, accident and sickness

$10,000 accidental death Quarterly $16.00
$50 weekly indemnity, accident and sickness

$15,000 accidental death Quarterly $24.00
$75 weekly indemnity, accident and sickness

$20,000 accidental death Quarterly $32.00
$100 weekly indemnity, accident and sickness

COST HAS NEVER EXCEEDED AMOUNTS SHOWN

ALSO HOSPITAL INSURANCE

	Single	Double	Triple	Quadruple
60 days in Hospital	5.00 per day	10.00 per day	15.00 per day	20.00 per day
30 days of Nurse at Home	5.00 per day	10.00 per day	15.00 per day	20.00 per day
Laboratory Fees in Hospital	5.00	10.00	15.00	20.00
Operating Room in Hospital	10.00	20.00	30.00	40.00
Anesthetic in Hospital	10.00	20.00	30.00	40.00
X-Ray in Hospital	10.00	20.00	30.00	40.00
Medicines in Hospital	10.00	20.00	30.00	40.00
Ambulance to or from Hospital	10.00	20.00	30.00	40.00
COSTS (Quarterly)				
Adult	2.50	5.00	7.50	10.00
Child to age 19	1.50	3.00	4.50	6.00
Child over age 19	2.50	5.00	7.50	10.00

$4,000,000.00
INVESTED ASSETS

PHYSICIANS CASUALTY ASSOCIATION
PHYSICIANS HEALTH ASSOCIATION

$19,500,000.00
PAID FOR CLAIMS

51 years under the same management
400 First National Bank Building
Omaha 2, Nebraska

$200,000.00 deposited with State of Nebraska for protection of our members

meeting held in January. Dr. A. C. Kelly was chosen vice chief; Dr. William A. Klein, secretary-treasurer, and Dr. Fred Baker, Dr. H. J. Jeronimus and Dr. Mario Fischer (ex officio member), the executive committee. Dr. Elmer Rusten, Minneapolis, entertained the group with a talk on big game hunting in Africa.

* * *

Dr. Cyril M. Smith, Duluth, was named chief-of-staff-elect of **St. Luke's Hospital,** Duluth, at the annual meeting held in January. Dr. Archie Olson is the present chief and Dr. S. H. Boyer, Jr., the retiring chief. Dr. Ralph Eckman was elected staff secretary. Dr. Stuart C. Cullen, professor of anesthesiology at the University of Iowa, was the guest speaker for the evening.

BLUE CROSS-BLUE SHIELD

In a recent analysis of Blue Shield claims, it was found that twelve claims paid by Blue Shield were covered under the Workmen's Compensation laws and consequently were not eligible for Blue Shield benefits. It was apparent from the review that Blue Shield had paid these claims because the space on the Medical Service Report requesting information on Workmen's Compensation coverage had not been marked properly. Other reviews have shown similar problems arising from improper or inaccurate reporting to questions on the Blue Shield claim blank. Principally the difficulties concern the failure to include the patient's birth date, the dates services were rendered, the charges made for the services, the appropriate annual income date, the signature of the attending doctor, and the date the condition for which care was rendered first existed or was known to exist. Omission of information such as listed in the foregoing statement creates additional administrative costs and also delays the action and payment of a claim over a longer period of time than is necessary.

The Medical Service Report form or claim blank which is furnished by Minnesota Blue Shield is worded in such a manner as to reduce to a minimum the time and effort required for its proper completion. Most of the items on the form merely require a check mark, while the remainder needs only a few words or figures. Constant study is being made for new ways to simplify and improve this claim form for the convenience of the profession and the subscriber.

The birth date of the patient, as previously stated, is frequently omitted by both doctor and subscriber, but it is of extreme importance in the correct processing of Blue Shield claims. For example, it is not possible to pay some claims such as those for hernia unless the age of the patient is known, due to the fact that operations for hernias carry a smaller fee for children under ten years of age. Conversely, for tendon repairs in children under five years of age, the payments are double those for persons of more advanced years. Other considerations such as the validity of a dependent's contract are related to the subscriber's birth date.

Annual income of the subscriber influences the amount and method of payment of a claim. The exact amount of the annual income is not required. It is only necessary to ask the patient if his income is above or below the Blue Shield service benefit income level, and check the appropriate space on the Medical Service Report. After the payment of claims, letters are often received from subscribers inquiring why an additional bill was sent to them by the doctor when they were entitled to the benefits of unlimited subscribers. Review of the files in such cases invariably indicated that there has been a failure to check the income level.

A substantial number of incorrect payments are caused by inaccuracies and incompleteness in that portion of the Medical Service Report set aside for stating the services rendered. For instance, when a gall bladder is removed with exploration of the common duct, the Medical Service Report most frequently contains only the fact that the operation was a cholecystectomy. The result is that $125 is paid whereas $150 should have been paid. Or, when a hysterectomy is performed, it is essential that Blue Shield be informed whether the surgery was a total or only a sub-total hysterectomy since the Schedule carries a different fee for each. Similarly with all services, complete description is necessary for proper payment, and the dates the services were rendered as well as the doctor's charges help in paying claims properly.

Finally, it is necessary that the doctor's name and

PHYSICIANS AND HOSPITALS SUPPLY CO., Inc.
1400 HARMON PLACE, MINNEAPOLIS, MINN.
INSTRUMENTS · TRUSSES · EQUIPMENT · PHARMACEUTICALS · DRUGS
MAIN 2494

Insurance at a Saving
Druggists' Mutual Insurance Company
OF IOWA, ALGONA, IOWA
Fire - Tornado - Automobile Insurance
Prompt Loss Service
MINNESOTA REPRESENTATIVE—S. E. STRUBLE, WYOMING, MINN.

address as well as his signature be furnished at the bottom of the medical report. Legal considerations prevent the processing of claims before these are on file, and of course it is difficult to prepare and send checks without the correct spelling of the doctor's name and address. Therefore, if the persons in the doctor's office who prepare the report would type or print this information in addition to having the physician affix his signature, prompt payment of the claim would follow.

A large measure of Blue Shield's success depends upon co-operation in attending to these items. Such attention will prevent excessive administrative cost and promote subscriber and physician satisfaction through the elimination of delay.

During the year of 1952, Blue Cross paid hospital bills incurred by subscribers in the amount of $12,546,456. Hospitalization expense averaged over a million dollars per month incurred by 167,045 subscribers.

During the year of 1952, Blue Shield paid $3,659,143 incurred by 103,777 participant subscribers.

ARTIFICIAL LIMBS
ORTHOPEDIC APPLIANCES
TRUSSES
SUPPORTERS
ELASTIC HOSIERY

FREJKA
Abduction Pillow Splint
by the
Original Maker

For displasia of the hip in the newborn and in early postnatal life (as described by Dr. V. L. Hart, Journal of Bone and Joint Surgery, Vol. 31-A, pp 357-372, April, 1949).

Prompt, painstaking service

BUCHSTEIN-MEDCALF CO.
223 So. 6th Street Minneapolis 2, Minn.

RADIUM RENTAL SERVICE
4340 W. 24TH STREET
MINNEAPOLIS 5, MINNESOTA
TEL. ATLANTIC 5297

Radium element prepared in type of applicator requested

ORDER BY TELEPHONE OR MAIL
PRICES ON REQUEST

BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical Libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

OFFICE MANAGEMENT OF OCULAR DISEASES. William F. Hughes, Jr., M.D., Professor and Head, Department of Ophthalmology, University of Illinois College of Medicine, Ophthalmologist in Chief, Illinois Eye and Ear Infirmary, and Attending Ophthalmologist, Presbyterian Hospital, Chicago. 452 pages. Illus. Price $9.00, cloth. Chicago: Year Book Publishers, 1953.

PRACTICE OF PSYCHIATRY. William S. Sadler, M.D., F.A.P.A., Consulting Psychiatrist to Columbus Hospital and Pinel Sanitarium; Fellow of the American Psychiatric Association; member of American Psychopathological Association. 1183 pages. Price $15.00, cloth. St. Louis: C. V. Mosby Co., 1953.

CLINICAL ALLERGY. French K. Hansel, M.D., M.S., Director Hansel Foundation for Education and Research in Allergy; Chief of Allergy Service, DePaul Hospital, St. Louis. 1005 pages. Illus. Price $17.50, cloth. St. Louis: C. V. Mosby Co., 1953.

BACK DOWN THE RIDGE. W. L. White. Author of "They Were Expendable" and many other books. 182 pages. Price $3.00, cloth. New York: Harcourt, Brace & Company, 1953.

CHLOROPHYLL IN MEDICINE. Scientific background, clinical experience in topical therapy, with Chloresium ointment and solution. 52 pages. Illus. Paper cover. Supplied without charge on request. Mt. Vernon, New York: Rystan Company, 1952.

THE STORY OF THE ADAPTATION SYNDROME (Told in the Form of Informal, Illustrated Lectures) By Hans Selye, M.D., Ph.D. (Prague), D.Sc. (McGill), FRS. (Canada), Professor and Director of the Institut de Medecine et de Chirurgie Experimentales Universite de Montreal. 225 pages. Illus. Price, $4.50. Montreal: Acta, Inc., 1952.

As physicians and medical students read and heard about Selye's Adaptation Syndrome, they were interested in knowing about his experiments and what led him to perform them. This book consists of a series of lectures given by Selye in response to this interest.

There are seven lectures in all. The first five lectures contain a chronological account of how the stress concept evolved and how one experiment led to another. The account includes a descriptive characterization of the general adaptation syndrome, the dynamics of it, the diseases of adaptation (i.e., the results of the imperfect functioning of this defense reaction), and the

PATTERSON SURGICAL SUPPLY COMPANY
103 East Fifth St., St. Paul 1, Minn.
HOSPITAL AND PHYSICIANS SUPPLIES AND EQUIPMENT
Cedar 1781-82-83

many variations involved. The sixth lecture is an enumeration both of the principal facts gained from all the research on stress and the adaptation syndrome and of the criticisms directed against the theory. The last lecture is a general summary of the adaptation syndrome concept and a look at some of the questions yet to be answered.

Because this is an informal, personal story, the author has felt free to intersperse his account with bits of his philosophy of research and with admonitions and exhortations to other researchers. It gives glimpses into Selye's enthusiasms, his disappointments, and his triumphs as this concept evolved.

M.M.P.

HISTOPATHOLOGICAL TECHNIC, Including a Discussion of Botanical Microtechnic. By Aram A. Krajian, Sc.D., formerly in Department of Pathology, Los Angeles County General Hospital, Los Angeles, Calif., and R. B. H. Gradwohl, M.D., Pathologist to Christian Hospital; Director, Gradwohl School of Laboratory and X-Ray Technique, St. Louis, Mo. 2d ed. 362 pages. Illus. Price, $6.75. St. Louis: C. V. Mosby Co., 1952.

This is the second edition of Krajian's *Histological Technic*, first published in 1940. Like the first, the current edition presents an excellent exposition of standard staining techniques, as well as Dr. Krajian's own methods of staining reticulum, elastic fibers, amyloid, myelin sheaths, bacteria, treponema pallida, et cetera. Dr. Gradwohl's most notable contribution is a section on Papanicolaou's method for the cytological diagnosis of malignancy. The sections on the dopa reaction and the demonstration of spirochaetes in tissues are also noteworthy.

On the whole, this book is a clearly written, understandable, and up-to-date laboratory manual for the histologist. It is reasonably complete, but there are a few surprising omissions, for a book published in 1952. For instance, there is no mention of the newer methods for staining mucopolysaccharides, such as the various modifications of the leukofuchsin-periodate reaction. The use of toluidine blue is mentioned only in connection with the demonstration of Nissl granules.

This volume is an excellent example of its type—namely, a laboratory manual of histopathologic techniques. It shares the limitations of almost all such manuals, however, in that it is concerned almost exclusively with the *how*, and the *why* is almost completely ignored. In this volume, for example, there is only one short paragraph on the theory of staining, while no less than twenty-six pages are devoted to the use and care of microtome knives. This "cook book" approach makes the book of more interest to laboratory technicians than to physicians.

Robert W. Goltz, M.D.

DERMATOLOGY; ESSENTIALS OF DIAGNOSIS AND TREATMENT. By Marion B. Sulzberger, M.D., Professor and Chairman, Department of Dermatology and Syphilology, New York University Post-Graduate Medical School; Director of Dermatology and Syphilology, Skin and Cancer Unit and University Hospital, New York University-Bellevue Medical Center; and Jack Wolf, M.D., Associate Professor of Clinical Dermatology and Syphilology, New York University Post-Graduate Medical School; Attending Dermatologist and Syphilologist, Skin and Cancer Unit and University Hospital, New York University-Bellevue Medical Center. 592 pages. Illus. Price, $10.00. Chicago: The Year Book Publishers, ©1952.

The authors have completely revised their text "Dermatologic Therapy" and changed the title to "Dermatology: Essentials of Diagnosis and Treatment." The authors state that their book is intended for the medical student, the graduate student in dermatology and the practicing nondermatologist. This book will be of value to the dermatologist, as well. It stresses the diagnosis and management of certain common and selected groups of dermatoses that are seen daily by the general practitioner as well as by the dermatologist.

The book is well organized, well illustrated and outlines practical steps in diagnosis and treatment. It includes the most recent information on the dermatologic uses of antibiotics, ACTH and cortisone. Two chapters are devoted to the diagnosis, course and management of the different stages of syphilis. This is a very worthwhile book for those who are dealing with the management of skin diseases.

Harold G. Ravits, M.D.

DIAGNOSIS OF CONGENITAL CARDIAC DEFECTS IN GENERAL PRACTICE

A new handbook, "Diagnosis of Congenital Cardiac Defects in General Practice," is being distributed by the American Heart Association and its affiliates. This handbook, designed for general practitioners and pediatricians, is intended to clarify the function of the family physician in the diagnosis of congenital cardiac defects and in the management of patients with these defects.

Written by Regina Gluck, M.D., Assistant Clinical Professor of Pediatrics, Children's Medical Service, Bellevue Hospital, New York City, the booklet points out the need for caution in advising on cardiac surgery before a definite diagnosis is made by a specialist. It suggests the advisability of selecting cases for referral to a cardiologist, and outlines the contribution to diagnosis and treatment that can be made by medical-surgical teams in special institutions.

The booklet may be obtained from affiliated heart associations or from the American Heart Association at 44 East 23rd Street, New York 10, N. Y.

DANIELSON MEDICAL ARTS PHARMACY, INC.

10-14 Arcade, Medical Arts Building
825 Nicollet Avenue—Two Entrances—78 South Ninth Street
MINNEAPOLIS

PHONES:
ATLANTIC 3317
ATLANTIC 3318

HOURS:
WEEK DAYS—8 to 7
SUN. AND HOL.—10 TO 1

Hall, Anderson & Nordehn

PRESCRIPTION PHARMACY
BIOLOGICALS
PHYSICIANS' SUPPLIES

SAINT PAUL, MINN.

LOWRY MEDICAL ARTS BUILDING
TELEPHONE: CEDAR 2735

STOP . . .

BEFORE YOU BUY
YOUR NEW CAR—
SEE US . . .

we can save you money on the finance charge.

**AMERICAN
NATIONAL
BANK**
OF SAINT PAUL

Bremer Arcade Robert at 7th CE 6666

Member Federal Deposit Insurance Corporation

Index to Advertisers

Abbott Laboratories 210
Aloe, A. S., Co. 267
American Meat Institute 208
American National Bank 285
Anderson, C. F., Co., Inc. 277
Ar-Ex Cosmetics, Inc. 285
Ayerst, McKenna & Harrison 212

Bayer Co. 206
Belleson's Medical Employment Service 286
Benson Optical Co. 278
Birches Sanitarium, Inc. 272
Brown & Day, Inc. 280
Buchstein-Medcalf Co. 283

Caswell-Ross Agency 202
Chester-Kent, Inc. 286
Classified Advertising 286
Cook County Graduate School of Medicine 270
Crestview Hospital 269

Dahl, Joseph E., Co. 270
Danielson Medical Arts Pharmacy, Inc. 284
Druggists Mutual Insurance Co. 282

Ewald Bros. Inside Back Cover

General Pharmacal Corporation 207
Glenwood Hills Hospitals 287

Hall, Anderson & Nordehn 285
Hazelden Foundation 273
Homewood Hospital 272

Juran & Moody 275

Knox Gelatine 266

Lederle Laboratories Facing page 216
Lilly, Eli, & Co. Front Cover, 220

Mead Johnson & Co. 288
Medical Protective Co. 268
Merck & Co., Inc. 219
Milwaukee Sanitarium Back Cover
Mounds Park Hospital Back Cover
Murphy Laboratories 268

North Shore Health Resort 279

Parke, Davis & Co. Inside Front Cover, 201
Patterson Surgical Supply Co. 283
Pfizer, Chas., & Co. 209
Philip Morris & Co. 218
Physicians Casualty Association 281
Physicians & Hospitals Supply Co. 216, 282
Professional Credit Protective Bureau 205

Q-Test Distributors of Minneapolis 207

Radium Rental Service 283

St. Croixdale Sanitarium 204
Schering Corporation 213
Searle, G. D., & Co. 263

Ulmer Pharmacal Co. 285
Upjohn Co. 211
U. S. Vitamin Corporation 214

Walker, Archie, Jr. 265

Winthrop-Stearns, Inc. 217
Wyeth 215

Ulmer
PHARMACAL COMPANY
1400 Harmon Place
Minneapolis 3, Minnesota

Send for literature and samples M-353b of our new double action barbiturate

BARTWO "ULMER"

Have they been tested on *ALLERGIC PATIENTS?*

★ When you prescribe hypo-allergenic beauty aids, ask this one question: "Have these cosmetics been clinically tested on allergic patients?" You can depend on it, *AR-EX Cosmetics have been clinically tested* on allergic patients. Prescribe them by brand name.

AR-EX COSMETICS, INC. 1036 W. Van Buren St. • Chicago 7, Ill.

**AR-EX
HYPO-ALLERGENIC
COSMETICS**

CLINICALLY TESTED
FOR ALLERGIC PATIENTS

Classified Advertising

Replies to advertisements with key numbers should be mailed in care of Minnesota Medicine, *2642 University Avenue, Saint Paul 14, Minn.*

FOR RENT—Attractive doctor's suite in south Minneapolis. Wonderful location for a practice to be built up, or as an outlying office for a downtown doctor. Write Wm. L. Cochrane, 7301 Fremont Avenue South, Minneapolis 19, Minnesota. Telephone RO 9-8758.

WILL LEASE fully equipped hospital in Northern Minnesota resort area. Owner being called into Armed Services. Partnership terms at later date. Contact Walker Hospital, Walker, Minnesota.

WANTED—Unmarried physician, under 28. On a one-year trial, general practice, then possible partnership. Address E-350, care Minnesota Medicine.

LOCUM TENENS WANTED—July to October, any location. Good salary expected. Minnesota graduate, licensed. Married, family. Starting surgery fellowship, Mayo Clinic, in October. Address E-351, care Minnesota Medicine.

WANTED—General practitioner for small southern Minnesota town. No competition. Equipment to fill five rooms for sale. Very reasonable. Local bank will finance. Lucrative practice can be built up. Address E-347, care Minnesota Medicine.

PHYSICIAN WANTED—In rapidly growing community at Hoffman's Corner, north of Saint Paul. New shopping center. Office space available in new modern building, can be arranged to suit tenant's requirements. Rent reasonable. Address J. M. Stultz, c/o Hoffman's Corner Pharmacy, Highway 61, County Road E, White Bear Lake 10, Minnesota. Telephone Victor 4-5775.

GENERAL PRACTICE in new, modern, equipped clinic building—rent or sell. No opposition. Northern Minnesota resort and agricultural area. Open hospital 20 minutes away. Above average gross. Ideal from standpoint of facilities and remuneration. Address E-352, care Minnesota Medicine.

PLACEMENT SERVICE

The Minnesota State Medical Association maintains a Medical Placement Service for the benefit of physicians who are looking for locations and positions; also for communities, medical groups and physicians who are looking for licensed medical assistance. For information, write to the Minnesota State Medical Association, 496 Lowry Medical Arts Bldg., Saint Paul 2, Minnesota.

FOR SALE—Radiographic-Fluoroscopic X-ray unit, including accessory and darkroom items complete. Consists of Mattern 60 MA, @90 K.V. generator with hand rocked tilting table, Bucky diaphragm and fluoroscopic screen assembly. For complete listing, write C. R. Holland, M.D., 422 Second Avenue Southwest, Rochester, Minnesota.

RADIOLOGIST—Diplomate American Board, thirty years, Priority IV, thoroughly trained and experienced in large hospital, desires association with hospital, individual or groups. Address E-353, care Minnesota Medicine.

FOR SALE—X-ray Fischer, TC-50 units, almost new. Also 36-inch Bucky and frame cassettes. Developing tank and all other equipment. A nice reduction. Write or telephone W. E. Distel, 963 West 7th Street, Saint Paul 2, Minnesota. Dale 2300.

DUKE NURSING HOME—Newly opened. Finest care for aged and convalescent. Reasonable rates. 389 Duke Street, Saint Paul. Telephone GArfield 3535.

EXCELLENT OPPORTUNITY to take over established surgical and medical general practice for price of equipment. Ideal for young surgeon and medical man entering partnership. Two doctors leaving. Offices in modern 20-bed hospital, with x-ray and laboratory facilities. Address E-354, care Minnesota Medicine.

Belleson's

MEDICAL EMPLOYMENT SERVICE

In the specialized field of all medical, dental and hospital personnel. Operated by a registered technician with medical personnel experience.

All interviews strictly confidential.

For Prompt, Efficient Service
Call or Write

1250 Baker Building
Minneapolis 2, Minnesota
Telephone: FIllmore 4063

CROLEUM SUSPENSOID
Topical Applicant Vehicle

. . . non-drying colloidal emulsion . . . flows readily . . . frequently used as a base for topical prescription of Sulfur, Calomel, Copper Sulfate and many others . . . facilitates penetration of medicaments . . . an excellent non-irritating dermal emolient used without adding medication.

SAMPLES ON REQUEST

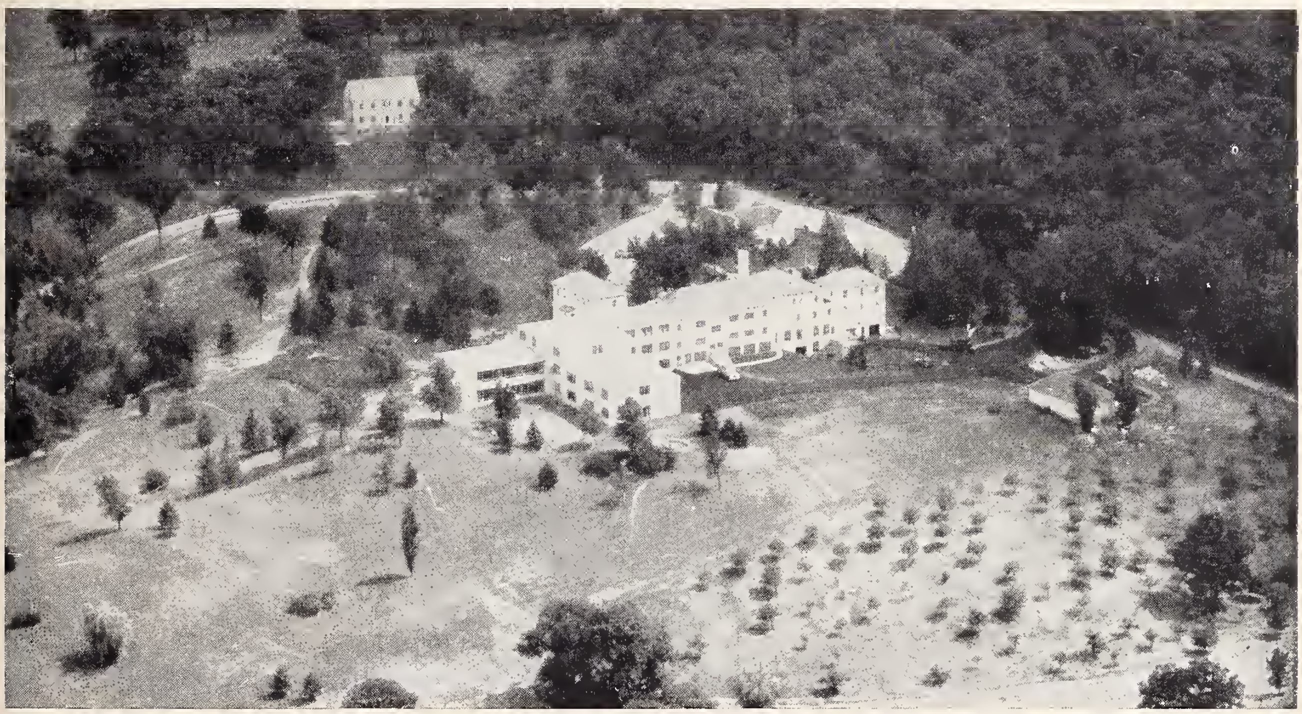
Chester-Kent, Inc.
100 S. WABASHA, ST. PAUL 1, MINN.

Glenwood Hills Neuro-Psychiatric **Hospital**

3901 Golden Valley Road **Minneapolis 22, Minnesota** **JUniper 2771**

Voluntary *Non-Profit* *Non-Sectarian*

140 acres of rolling, wooded and lake land—seven minutes from downtown Minneapolis



Electroencephalography

Rehabilitation Center **Therapies** **Laboratory**

Write for additional information

— ALSO —

Glenwood Hills School of Neuro-Psychiatric **Nursing**

Where attitudes and nursing skills are combined to give the maximum in patient care

One Year Course *Tuition Free* *Room and Board Free*

For information regarding the Nursing School—please write
Helen Swenson Rascop, R.N., Director of Nurses, Glenwood Hills Hospital

a strong start...

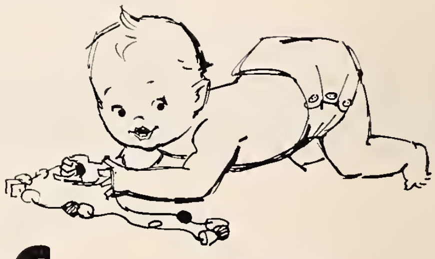
Strong muscle development and excellent tissue turgor characterize the *sturdy growth* of babies fed Olac®, Mead's powdered formula.

Olac supplies milk protein in exceptionally generous amounts. Its fat, a single highly refined vegetable oil, is well tolerated and easily assimilated. Dextri-Maltose, supplementing the lactose of the milk, meets energy needs and spares protein. Vitamin A and D supplements are also included in the formula.

Olac is easily mixed with warm water—1 measure to each 2 ounces water makes a formula supplying 20 calories per fluid ounce.

Olac is ideal also for supplementary and complementary feedings of breast-fed babies.

for both full term and premature infants



Olac
MEAD
A High Protein Formula for Infants
MEAD JOHNSON & COMPANY • EVANSVILLE, INDIANA, U.S.A.

Olac

MEAD

MEAD JOHNSON & COMPANY
Evansville 21, Ind., U.S.A.

..Chloromycetin®

is indisputably the drug of choice in typhoid fever and is considered by many to be useful in other salmonelloses

outstanding in acute Shigella dysentery, CHLOROMYCETIN permits immediate treatment regardless of dehydration and provides rapid relief.

exceptionally well tolerated, CHLOROMYCETIN (chloramphenicol, Parke-Davis) is noted for the infrequent occurrence of even mild gastrointestinal side effects, an important consideration in treating infections of the gastrointestinal tract. Although serious blood disorders following its use are rare, it is a potent therapeutic agent, and should not be used indiscriminately or for minor infections — and, as with certain other drugs, adequate blood studies should be made when the patient requires prolonged or intermittent therapy.

lerated, broad spectrum antibiotic

MEDICAMENTA · VERA ·
PD & CO.

Parke, Davis + Company
DETROIT, MICHIGAN

Wishful Thinking

Those of you who haven't yet paused in your busy day to provide for adequate income protection, are guilty of wishful thinking. You are hoping that the law of averages will pass you by. Most of us know that you can't depend upon a four-leaf clover.

This Special Disability Policy offers more protection per-dollar than any other contract on the market.

Our counsel is to stop depending upon a four-leaf clover. Call or write this office NOW—Or better yet—stop at our booth, No. 10 at the State Medical Convention in May and visit with us about your accident and sickness program.

CR
AGENCY
Minneapolis

CASWELL-ROSS AGENCY

1177 N. W. Bank Building
Minneapolis—MA 2585

Minneapolis 2, Minnesota
St. Paul—ZE 2341

Insurors to:

Minnesota State Bar Association
Minnesota State Dental Association
Minnesota State Medical Association
Minnesota Society of C. P. A.
Minnesota State Pharmaceutical Assn.
Minnesota Auto Dealers Association
Minnesota Federation of Eng. Societies
Minnesota State Veterinary Medical Soc.
Hennepin County Medical Society
Hennepin County Bar Association
11th Judicial Bar Association
Minneapolis Association of Life Underwriters

Ramsey County Medical Society
Ramsey County Bar Association
St. Paul District Dental Soc.
Minneapolis District Dental Soc.
St. Cloud Dental and Stearns County Medical Society
Duluth District Dental Society
East Central Medical Society
St. Louis County Medical Society
West Central Dist. Dental Society
Northwest Proprietors Association
St. Paul Life Underwriters, Inc.

Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 36 **April, 1953** **Number 4**

Contents

ONE HUNDRED YEARS OF ORGANIZED MEDICINE IN MINNESOTA.
Robert Rosenthal, M.D., Saint Paul, Minnesota... 323

MEDICAL SCHOOLS AND MEDICAL EDUCATION OVER THE PAST CENTURY.
Harold S. Diehl, M.D., Minneapolis, Minnesota.. 332

EIGHTY YEARS OF PUBLIC HEALTH.
Netta Wilson, M.A., M.S., and *Albert J. Chesley, M.D.,* Saint Paul, Minnesota.................. 337

HISTORY OF THE MINNESOTA STATE BOARD OF MEDICAL EXAMINERS.
F. H. Magney, M.D., Duluth, Minnesota........ 341

MEDICAL JOURNALISM IN MINNESOTA.
Carl B. Drake, M.D., Saint Paul, Minnesota...... 344

A CENTURY OF MEDICINE.
S. Marx White, M.D., Minneapolis, Minnesota.... 349

ONE HUNDRED YEARS OF SURGICAL PROGRESS.
Donald C. Balfour, M.D., Rochester, Minnesota.. 356

EARLY ORTHOPEDIC SURGERY IN MINNESOTA
Carl C. Chatterton, M.D., F.A.C.S., Saint Paul, Minnesota 360

PROGRESS IN PEDIATRICS IN MINNESOTA.
O. W. Rowe, M.D., Duluth, Minnesota.......... 364

MODERN OTOLARYNGOLOGY AS A SPECIALTY.
Lawrence R. Boies, M.D., Minneapolis, Minnesota 368

OPHTHALMOLOGY IN THE PAST CENTURY.
Erling W. Hansen, M.D., Minneapolis, Minnesota 371

DERMATOLOGY IN THE FIRST CENTURY OF MEDICINE IN MINNESOTA.
Henry E. Michelson, M.D., Minneapolis, Minnesota, and *Francis W. Lynch, M.D.,* Saint Paul, Minnesota 375

A HUNDRED YEARS OF PROGRESS IN THE THERAPY OF URINARY INFECTION.
William F. Braasch, M.D., Rochester, Minnesota.. 378

MINNESOTA OBSTETRICS.
William P. Sadler, M.D., Minneapolis, Minnesota 381

NEUROLOGIC AND PSYCHIATRIC TRENDS IN MINNESOTA.
A. B. Baker, M.D., B. C. Schiele, M.D., D. W. Hastings, M.D., and *R. A. Jensen, M.D.,* Minneapolis, Minnesota....................... 384

LABORATORY AIDS TO MEDICAL PRACTICE:
Rapid Frozen Sections—Their Value in Diagnosis.
Malcolm B. Dockerty, M.D., Rochester, Minnesota 387

PRESIDENT'S LETTER:
For the Benefit of the Sick..................... 389

EDITORIAL:
State Medical Association Centenary............ 390
Reorganization, with Reservations.............. 390
American Medical Educational Fund Drive...... 391
False Propaganda 392

MEDICAL ECONOMICS:
Facilities Increase for Rural Medical Care....... 395
Commission Formed to Study Taxes, Social Security 396
Survey Shows GP Fares Well.................... 396

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS.. 397

MINNESOTA STATE MEDICAL ASSOCIATION—One Hundredth Anniversary Meeting 398

REPORTS AND ANNOUNCEMENTS.................... 402

WOMAN'S AUXILIARY 410

IN MEMORIAM.................................... 412

OF GENERAL INTEREST........................... 416

BOOK REVIEWS 426

Contents of MINNESOTA MEDICINE copyrighted by Minnesota State Medical Association, 1953

Entered at the Post Office in Saint Paul as second class mail matter. Accepted for mailing at the special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 13, 1918.

MINNESOTA MEDICINE

Official Journal of the Minnesota State Medical Association

Published by the Association under the direction of its Editing and Publishing Committee

Office of Minnesota State Medical Association,
496 Lowry Medical Arts Bldg., Saint Paul 2, Minnesota.

EDITING AND PUBLISHING COMMITTEE

E. M. Hammes, Saint Paul
Philip F. Donohue, Saint Paul
L. M. Eaton, Rochester
J. J. Heimark, Fairmont
C. L. Oppegaard, Crookston
T. A. Peppard, Minneapolis
H. A. Roust, Montevideo
O. W. Rowe, Duluth
Henry L. Ulrich, Minneapolis
A. H. Wells, Duluth

EDITORIAL STAFF

Carl B. Drake, Saint Paul, Editor
George Earl, Saint Paul, Associate Editor
Henry L. Ulrich, Minneapolis, Associate Editor

BUSINESS MANAGER

J. R. Bruce

Annual Subscription—$3.00. Single Copies—$0.40. Foreign and Canadian Subscriptions—$3.50

The right is reserved to reject material submitted for editorial or advertising columns. The Editing and Publishing Committee does not hold itself responsible for views expressed either in editorials or other articles when signed by the author.

Classified advertising—ten cents a word; minimum charge, $2.00; key number, 25c additional. Remittance should accompany order.

Display advertising rates on request.

Address all communications concerning the journal to Minnesota Medicine, 2642 University Avenue, Saint Paul 14, Minnesota. Telephone Nestor 2641.

A MODERN PRIVATE SANITARIUM

for the Diagnosis, Care and Treatment of Nervous and Mental Disorders

MAIN BUILDING—One of 10 Units in "Cottage Plan"

ST. CROIXDALE ON LAKE ST. CROIX

PRESCOTT, WISCONSIN

Located on beautiful Lake St. Croix, 18 miles from the Twin Cities, it has the advantages of both City and Country. Every facility for treatment provided, including recreational activities and occupational-therapy under trained personnel. Close personal supervision given patients, and modern methods of therapy employed. Inspection and cooperation by reputable physicians invited. Rates very reasonable. Illustrated folder on request.

Prescott Office
Prescott, Wisconsin
Howard J. Laney, M.D.
Tel. 39 and Res., 76

Consulting Neuro-Psychiatrists
Hewitt B. Hannah, M.D., Andrew J. Leemhuis, M.D.
527 Medical Arts Bldg., Tel. MAin 1357, Minneapolis, Minn.

Superintendent
Ella M. Leseman
Prescott, Wisconsin
Tel. 69

Upjohn

less-antigenic penicillin:

Cer-O-Cillin

Trademark Reg. U. S. Pat. Off.

POTASSIUM

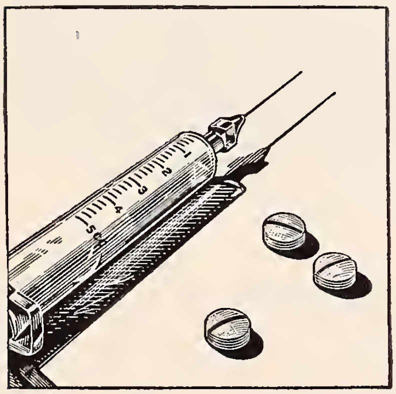
ACCEPTED
COUNCIL ON
PHARMACY
AND
CHEMISTRY
AMERICAN MEDICAL ASSOCIATION

Available as:

Sterile vials containing 200,000 units Crystalline Penicillin O Potassium

Bottles of 12 buffered tablets, each containing 100,000 units Crystalline Penicillin O Potassium

The Upjohn Company, Kalamazoo, Michigan



Congratulations to the Minnesota State Medical Association on its 100th anniversary!

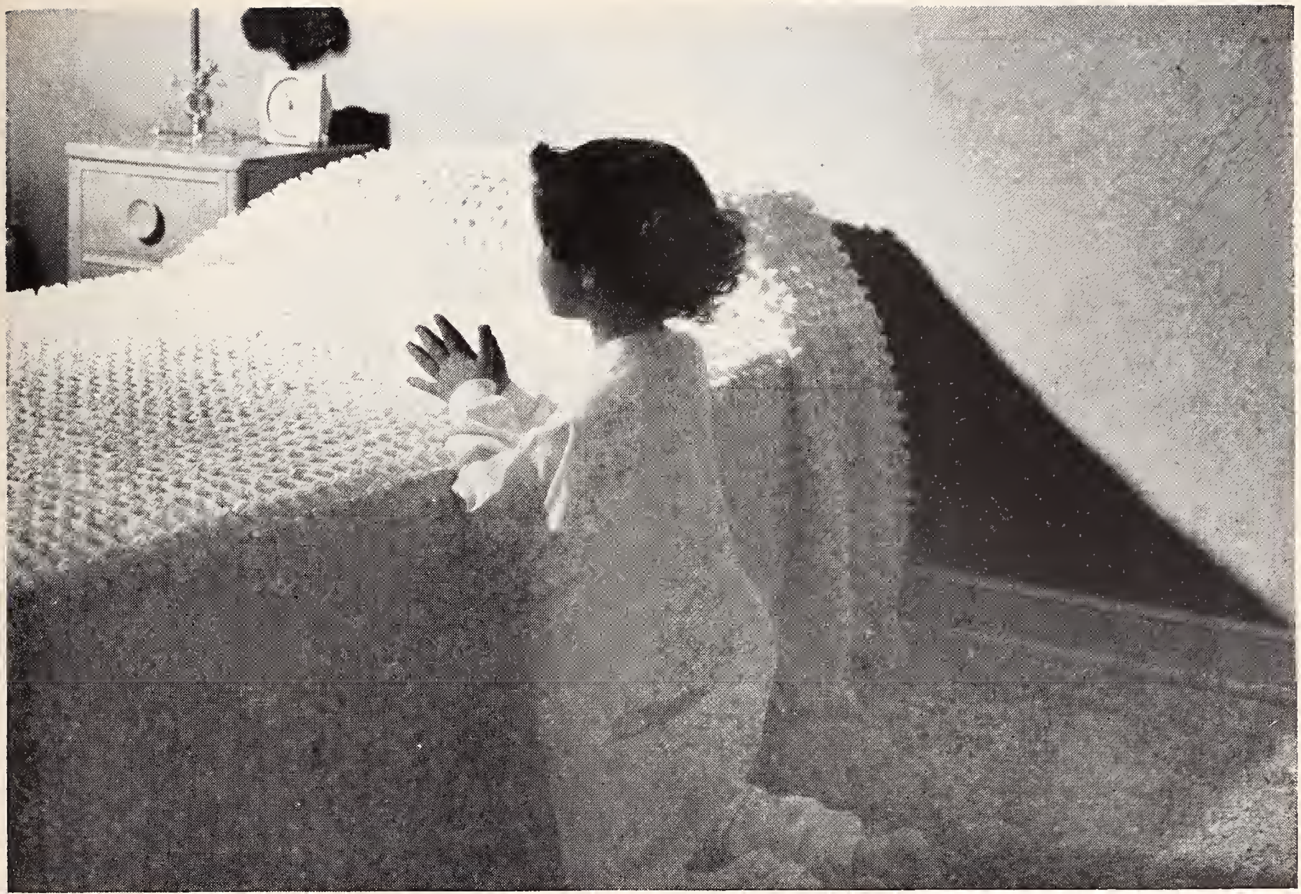
In celebration of your 100th anniversary, we take this opportunity to extend our heartiest congratulations and sincere best wishes to the hundreds of loyal members that we have had the privilege of serving through the years. All during our 33 years of serving the medical profession, we have endeavored to give our customers the best of service and the highest quality merchandise at most favorable prices. Your continued patronage has shown that you have placed complete faith in our organization, for which we are thankful. To one and all we say a heart-felt "thank you" . . . and pledge for the years ahead to continue and, wherever possible, serve you even better than in the past.

You are cordially invited to visit our exhibit—Booths 92 and 93—at this year's meeting in Saint Paul, May 18, 19 and 20.

PHYSICIANS & HOSPITALS SUPPLY CO. INC.
PHYSICIANS & HOSPITALS SUPPLY CO.
P&H

PHYSICIANS AND HOSPITALS SUPPLY CO., Inc.

Minneapolis 3 **1400 Harmon Place** **Minnesota**



". . . and please get people to pay what they owe Daddy. Mommy says that's why he's so cross."

Are you burdened by a heap of uncollected accounts? The Professional Credit Protective Bureau can really help you.

The Professional Credit Protective Bureau is collecting thousands of past due accounts in the professional field.

The Professional Credit Protective Bureau is a credit control organization that sees that the patient pays direct to the supplier of services. In other words you PAY THE COLLECTION ORGANIZATION AFTER YOUR PATIENT HAS PAID YOU and neither you nor the debtor is embarrassed.

Ninety-two leading trade associations . . . including many medical and dental organizations . . . are recommending this credit control system as part of their service to members.

It will pay you to investigate this tried and true system. Use the attached coupon.

Professional Credit Protective Bureau
724 Metropolitan Bldg., Dept. MM 4-53
Minneapolis 1, Minn.
Please send me full details on the operation of your collection service.

Name ....

Address ....

City .... State ....

Division of
The I.C. System
724 Metropolitan Bldg.
Minneapolis 1, Minn.

NOTES: INTRACTABLE CONSTIPATION

A SUCCESSFUL TREATMENT
WITHOUT HARSH CATHARTICS

Gentle stimulation

When mild bowel stimulation is desired in addition to bulk therapy, Hydrocil Fortified is both safe and effective. Hydrocil Fortified absorbs liquids with unusual efficiency, creating 35 times its own weight of moist, lubricating bulk. It also supplies 3 mgm/5 gm acetphenolisatin, a newly-developed synthesis of the laxative principle in prunes.

Safe, effective

Acetphenolisatin is mild[1], yet on a weight for weight basis is considerably more effective than other common laxative drugs[2]. It is not absorbed, and is apparently non-irritating to the intestinal mucosa. As far as known, no tolerance is developed[3].

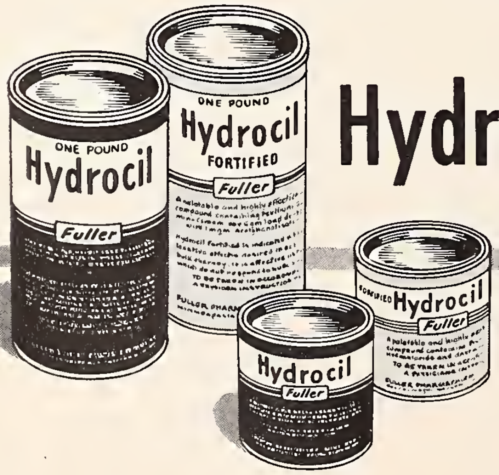
Indications

Hydrocil Fortified has proved highly successful in correcting intractable constipation. When prescribed after anorectal surgery, its bulk-producing agents afford natural dilation of the anal canal during passage of the stool. Its fortifying ingredient tends to prevent postoperative impactions.

How supplied

Hydrocil Fortified (blue label) and Hydrocil Regular (brown label) are provided in 4-oz. and 1-lb. canisters. A supply for trial will be sent on written request to Dept. M2, Fuller Pharmaceutical Co., 715 So. 10th St., Minneapolis 4, Minn.

1. Fuld and Tugenreich, Arch. Verdauungskrank, 37:59.
2. The Merck Index, Merck & Co.
3. Ungar, L.K.: Vien. Med. Weekly, 21:697.



Hydrocil *Fortified • Hydrocil Regular • Benadex Benzocones • Tucks • products of . . .*

fuller
PHARMACEUTICAL COMPANY

. . . "truly extraordinary" results in intractable bronchial asthma

Cortone®

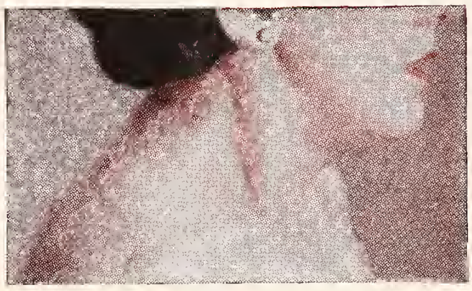
ACETATE

(CORTISONE ACETATE, MERCK)

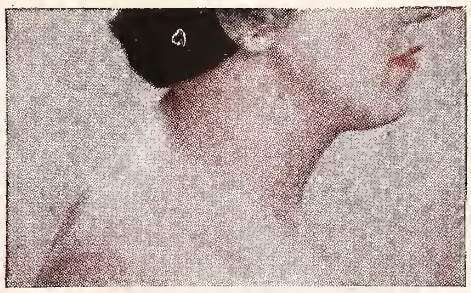
In a review article on hormonal therapy,[1] complete relief of symptoms was reported in 62 per cent of 116 asthma patients. Another 24 per cent were made "quite comfortable." Duration of relief varied widely, with remissions occasionally lasting as long as several months. The author calls these results "truly extraordinary."

[1] Evans, R. R., and Rackemann, F. M.: *A.M.A. Arch. Int. Med.* 90:96–127, July 1952.

All* CORTONE *Tablets carry this trade-mark: 4



Before treatment. Observe typical facies and tense sternocleidomastoid.



After therapy with CORTONE. Note relaxation of accessory muscles of respiration.

CORTONE *is the registered trade-mark of Merck & Co., Inc. for its brand of cortisone.*

MERCK & CO., INC.
Manufacturing Chemists
RAHWAY, NEW JERSEY

©Merck & Co., Inc.

"Anxiety is the great modern plague"

By providing mild synergistic sedation at three important sensory and reflex levels of the nervous system (brain, spinal cord, and neuromuscular junction of smooth muscle) instead of focusing relatively intensive pharmacological action at but one of these levels;

Completely balanced psychosomatic sedation for the treatment of Visceroneurosis is obtained

"Just remember that it's not what they eat that's causing their ulcers; it's what's eating them."

Synergism in clinical medicine is sufficiently rare to warrant special attention whenever demonstrated or even indicated.

'MYOTHINE'*

Tablets

UNDUPLICATED IN CLINICAL ACCEPTANCE

IN

Gastro-Intestinal

MANAGEMENT

With this in hand

'MYOTHINE'
TABLETS
C. R. Canfield & Co.

Formula:

Each tablet contains:

Mephenesin	Gr. 5
Phenobarbital	Gr. ¼

In addition, each tablet contains:

Atropine Sulfate	.0227 mg.	Equal to 7½ minims of Tr. Belladonna U.S.P. in alkaloidal strength.
Hyoscyamine Sulfate	.1476 mg.	
Hyoscine Hydrobromide	.0065 mg.	

DOSAGE:
One tablet four times a day one-half hour before meals and at bedtime. Dosage may be increased depending upon effect desired.

The
Internist
is assured of
Dependability in Smooth Muscle Sedation
with broad, sustained action

WHEN SEDATION IS A PROBLEM

IN

Frequently encountered indications:

- ✶ Peptic Ulcer
- ✶ Psychosomatic factor in visceral spasm
- ✶ Worry, anxiety, fear
- ✶ Functional gastro-intestinal spasm
- ✶ Pyloro and cardiac spasm
- ✶ Biliary and Ureteral colic
- ✶ Spastic colon
- ✶ Nervous Indigestion
- ✶ Intestinal Hypermotility
- ✶ Hypertension
- ✶ Hyperemesis gravidarum
- ✶ Dysmenorrhea
- ✶ Bronchial spasm
- ✶ Motion sickness (sea, car, and air)
- ✶ Tenesmus
- ✶ Acute and Chronic colitis

— — — — — —

References:

1. Kramer, P., and Ingelfinger, F. J.: Med. Clin. North Amer., 32:1227, 1948
2. Godman, H. E., and Adriani, J.: J.A.M.A., 141:754 (1949).
3. Schlan, L. S., and Unna, K. R.: J.A.M.A., 140:672 (1949).
4. Dixon, H. H., et al.: Am. J. M. Sc., 220:23 (1950).
5. Goodman, L., and Gilman, A.: The Pharmacological Basis of Therapeutics. New York: The Macmillan Co., 1941.
6. Gammon, G. D., and Churchill, J. A.: Am. J. M. Sc., 217:143 (1949).

C. R. Canfield & Co.
2736-38 Lyndale Avenue South
Minneapolis 8, Minnesota
Pharmaceuticals Originated by Clinical Research

**Exclusive trademark of the C. R. Canfield & Co.*

over 100,000

diabetes detection centers!

"The ideal detection center is

the office of the family physician."[1]

Increasing experience in diabetes case-finding indicates that intermittent surveys and mass screening drives, although useful, have certain limitations. Getting and others,[2] in evaluating a community detection campaign (well publicized in the area), report that only 59% of persons accepting the free testing materials actually performed the test. Only 24% of those with positive results sought medical advice.

To find the estimated one million unknown diabetics[3] and place them under needed medical care, the indispensable factor for success is the activity of the individual physician.

1. Blotner, H., and Marble, A.: New England J. Med. *245*:567 (Oct. 11) 1951.
2. Getting, V. A., and others: Diabetes *1*:194, 1952.
3. Wilkerson, H. L. C., and Krall, L. P.: J.A.M.A. *135*:209 (Sept. 27) 1947.

DIABETES DETECTION IN DAILY PRACTICE — a nationwide poll

To assist in the compilation of nationwide data on diabetes, gained through the experiences of private practitioners, Ames Company recently mailed a questionnaire to the medical profession. Your reply will become a vital part of a statistical study to be published on the results of this questionnaire.

AMES
COMPANY, INC. Elkhart, Indiana Ames Company of Canada, Ltd., Toronto
makers of CLINITEST® Reagent Tablets
for detection of urine-sugar

46353

Cordelia

AWARD WINNING BRASSIERES!

Cordelia surgical brassieres have won the Blue Ribbon for five consecutive years. Now, Cordelia has won BOTH the GOLD MEDAL and BLUE RIBBON AWARDS at the 1952 California State Fair Fashion Exhibit.

When she asks...

HERE ARE THE FACTS!

Most corrective, surgical and maternity brassiere problems have been scientifically solved by the staff of Physiospecialists at Cordelia of Hollywood.

THE GOLD MEDAL WINNER!

Each Cordelia brassiere is planned and made for easy, individual fittings by experts in local stores.

THE BLUE RIBBON WINNER!

Every Cordelia brassiere is a luxury in fashion fabrics — beautifully, youthfully designed. These are the facts judges took into consideration — then awarded *Cordelia the winner!*

Prescribe

Cordelia ®

3107 Beverly Blvd.
Los Angeles, Calif.
DUnkirk 3-1365

California's leading creator and manufacturer of scientifically designed surgical, corrective, maternity and style brassieres.

F HOLLYWOOD BRASSIERES

Originators of the famous "Control-Lift" design

Accepted for Advertising in Publications of the American Medical Association

"Control Lift" Brassieres Available at These Stores

Duluth — The Silhouette Shop, c/o Albenberg's

Elk River—Barsness Variety

Hibbing—Corbett Corset Shop

Lamberton—Kluegel Dry Goods Dept.

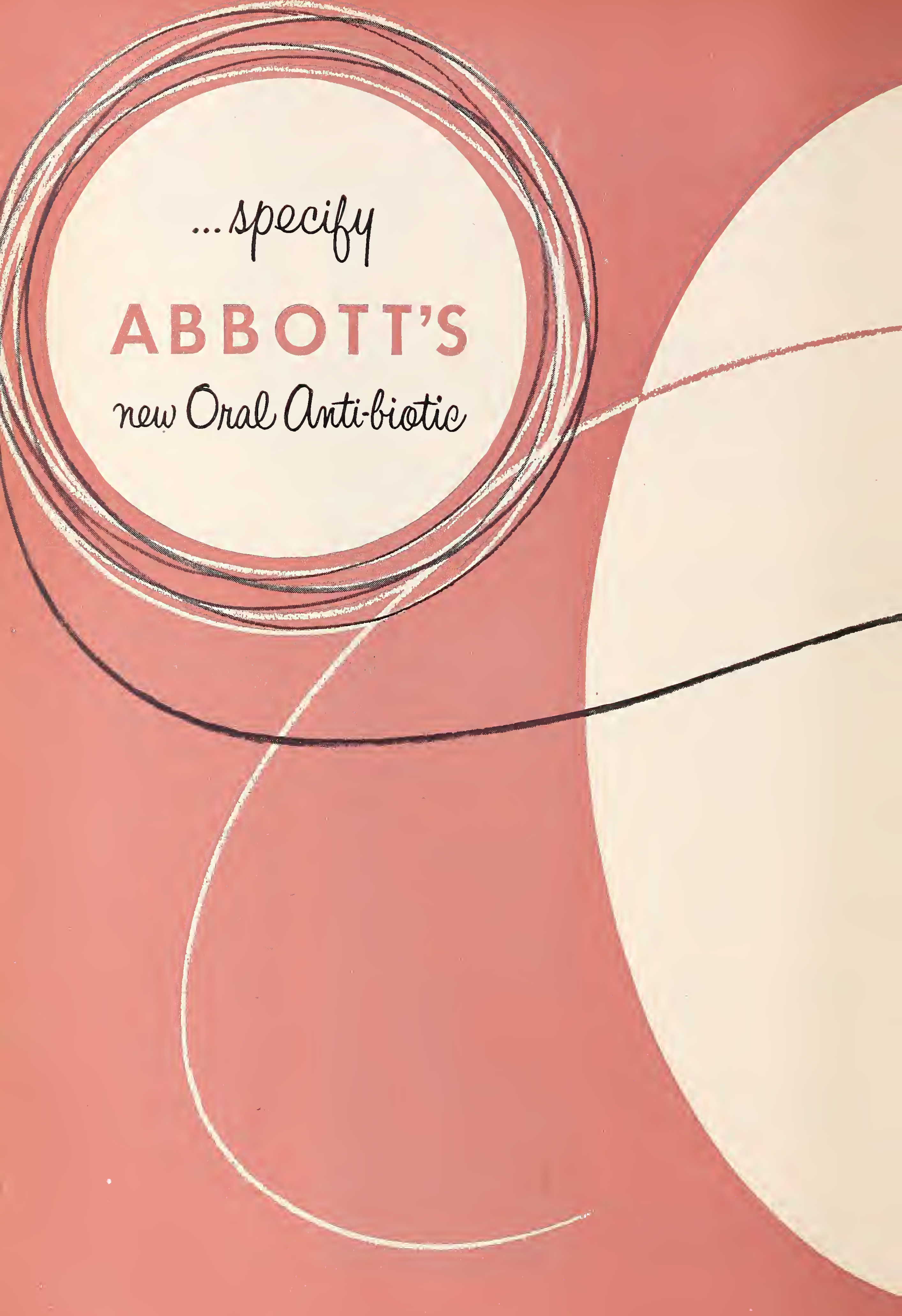
Mankato—L. Salet & Son

Minneapolis—
  Angela's St. Louis Pk.
  The Dayton Co.
  Katherine K Corset Shop
  Shirley's Maternity Fashions

Rochester—
  C. F. Massey Co.
  Peggy's Uniform Shop

Saint Paul—
  The Golden Rule

Virginia—Jarmin's, Inc.


...specify
ABBOTT'S
new Oral Anti-biotic

Especially effective against gram-positive organisms resistant to other antibiotics.

Low toxicity; reported side effects infrequent.

Special "high-blood-level" coating.
ERYTHROCIN, *0.1-Gm. (100-mg.) Tablets, bottle of 25.*

ERYTHROCIN

TRADE MARK

(Erythromycin, Abbott)

ICATIONS Pharyngitis, tonsillitis, scarlet fever, erysipelas, pneumococcic pneumonia, osteomyelitis, pyoderma. *Also other infections caused by organisms* susceptible to its action, including staphylococci, streptococci and pneumococci.

DOSAGE Total daily dose of 0.8 to 2 Gm., depending on severity of the infection. A total daily dose of 0.6 Gm. is often adequate in the treatment of pneumococcic pneumonia. *For the average adult* the initial dose is 0.2 Gm. to be followed by doses of 0.1 or 0.2 Gm. followed by doses in the same range every four to six hours. *For severely ill patients* doses up to 0.5 Gm. may be repeated at six-hour intervals if necessary. Satisfactory clinical response should appear in 24 to 48 hours if the causative organism is susceptible to ERYTHROCIN. Continue for 48 hours after temperature returns to normal.

Abbott

1. McGuire et al. (1952), J. Antibiotics & Chemo., 2:281, June.
2. Heilman et al. (1952), Proc. Staff Meet. Mayo Clin., 27:385, July 16.
3. Haight and Finland (1952), New Eng. J. Med., 247:227, Aug. 14.

For Your Security and Peace of Mind

A Disability Life Income Program for Eligible Members of your profession

Lifetime Protection
for both
Sickness & Accidents

A SILENT PARTNER . . . Continental's Companion Policies

ACCIDENT AND CONFINING SICKNESS

Pays	$ 400	Monthly Benefits first 2 years ($200 1st mo.) and
	$ 300	Monthly Benefits thereafter for Life.
Pays	$ 600	Additional Monthly Benefits First 3 Months for Hospital Disability.
Pays	$ 7,500	Accidental Death Benefits, $12,500 Double Indemnity.
Pays	$10,000	Loss of Hands, Feet or Eyes, $15,000 Double Indemnity (or)
	$ 5,000	Cash, & $400 monthly first 2 years, $300 monthly thereafter. Adjusted benefits for disabilities occurring after age 60.

SPECIAL FEATURES

No Cancellation Clause,—Standard Provision 16

No Terminating Age,—Standard Provision 20

No Increase in Premium,—Once Policy is Issued

Grace Period 15 Days

Non Pro-Rating,—Standard Provision 17

Non-Assessable,—No Contingent Liability

Non-Aggregate,—Previous Claims Paid do not limit Company's Liability

Unusually Complete Protection

- ✶ Pays Monthly Benefits from 1st Day to Life.
- ✶ Pays Benefits for both Sickness and Accident.
- ✶ Pays Lifetime Benefits for Time or Specific Losses.
- ✶ Pays Regular Benefits for Commercial Air Travel.
- ✶ Pays Benefits for Non-Disabling Injuries.
- ✶ Pays Benefits for Non-Confining Sickness.
- ✶ Pays Benefits for Septic Infections.
- ✶ Pays Whether or not Disability is Immediate.
- ✶ Waives Premiums for Total Permanent Disability.
- ✶ Renewal is guaranteed to individual active members, except for non-payment of premium, so long as the plan continues in effect for the members of your designated organization.

BOYD & BOYD, INC.
CONTINENTAL CASUALTY COMPANY
30 EAST ADAMS STREET—SUITE 1100—CHICAGO 3, ILLINOIS

Also Attractive
Health With
Lifetime Accident
Policy I.P.-1327
For Ages 59 to 75

Name ....

Address ....

Age ....

NOTICE:—Only Companion Policies GP-1309 and IP-1308 pay the above benefits.
IMPORTANT—Permit no agent to substitute—IMPORTANT

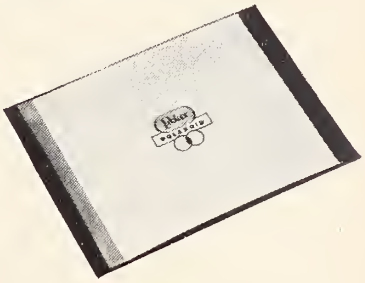
PICKER-POLAROID "ONE MINUTE X-RAY" is now available for CIVILIAN use

You've probably already heard of the "one-minute" Picker-Polaroid radiograph. Introduced a little over a year ago, this dramatic development was immediately accepted by the Armed Services which requisitioned the entire output for military needs. Ever since, we have been struggling to increase production to the point where parallel civilian needs could at least be partly met. That point has now been reached. Limited quantities are becoming available to civilian users.

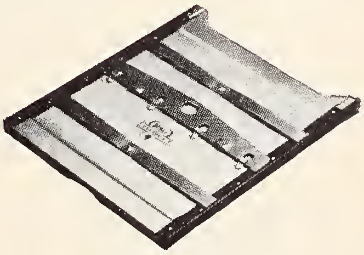
The Picker-Polaroid system is an adaptation to radiography of the self-development principle of the Polaroid Land Camera. The whole job takes only a minute . . . can be done in broad daylight . . . needs no darkroom, no solutions, no dryer. It is all incredibly simple and quick: (a) you load the cassette (b) make the exposure (c) put the cassette in the automatic processing box. Wait sixty seconds: open the box and there's your finished radiograph . . . flat, dry, ready for use. Its speed and convenience have already proven invaluable in the operating room for hip-pinning and similar procedures; for emergency hospital admissions, for work with portable and mobile x-ray units.

Since quantities are still limited, those wishing to obtain Picker-Polaroid equipment supplies would do well to communicate at once with either their local Picker office, or with Picker X-Ray Corporation, 25 South Broadway, White Plains, New York.

BROWN & DAY, INC.
St. Paul 1, Minnesota



THE PACKET



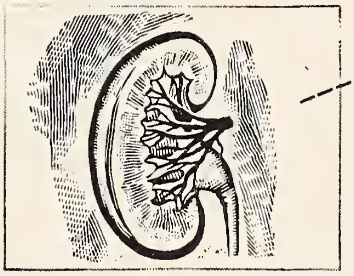
THE CASSETTE

THE AUTOMATIC PROCESSOR

Picker x-ray POLAROID®

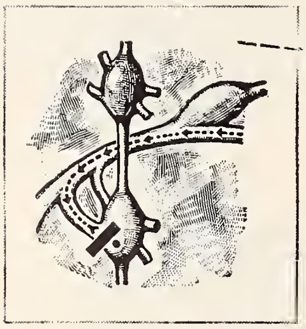
Regitine®

(phentolamine methanesulfonate Ciba), preferred in the diagnosis of pheochromocytoma, the cause of the most common form of hypertension of *known* etiology. The injection of this *adrenergic blocking agent* affords an accurate test that is relatively safe, and can be simply performed by any physician, unassisted, in his office.



three new agents in the control of hypertension

Complete information
can be obtained by writing to
the Medical Service Division,
Ciba Pharmaceutical Products, Inc.,
Summit, New Jersey.



Esomid®

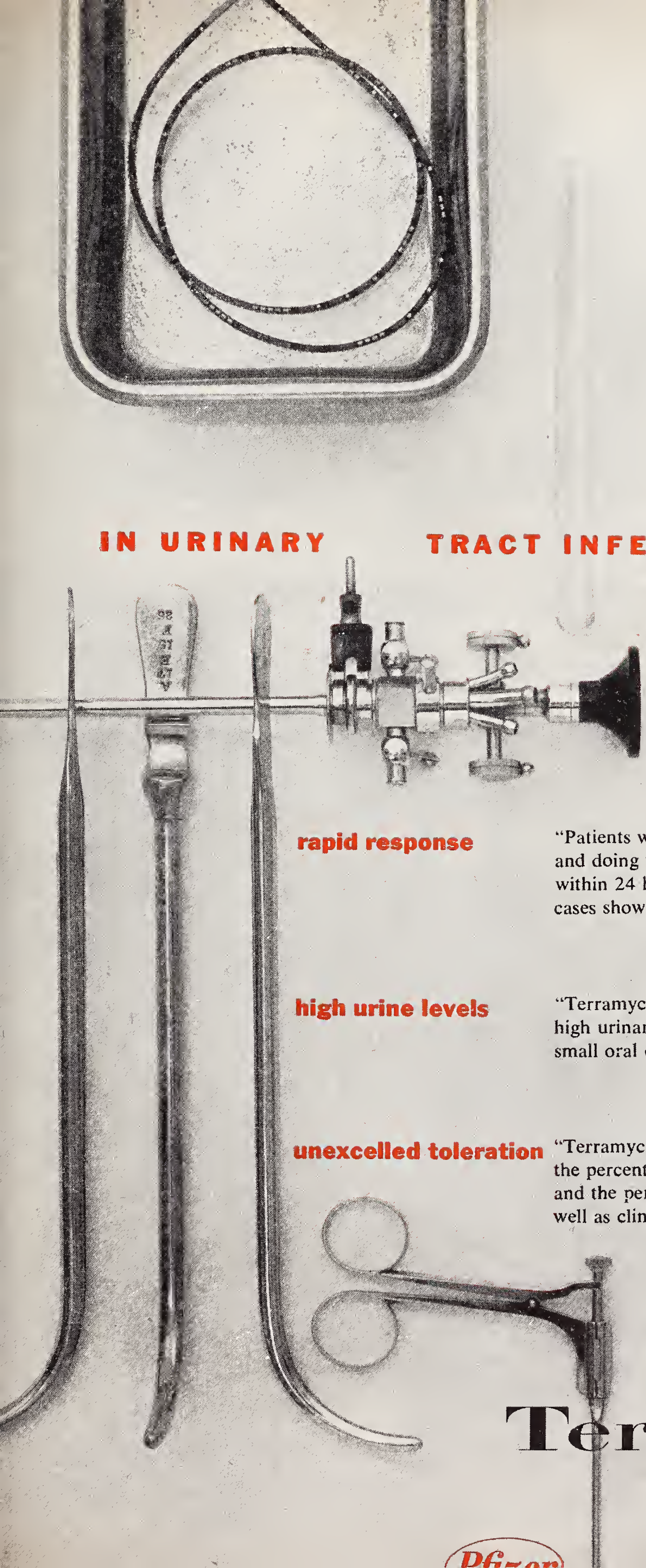
chloride (hexamethonium chloride Ciba), a potent oral hypotensive agent, may be particularly valuable in those patients with severe hypertension which has failed to respond to Apresoline. Esomid acts as a *ganglionic blocker*, inhibiting the transmission of impulses through all autonomic ganglia.

Apresoline®

hydrochloride (hydralazine hydrochloride Ciba), an agent of choice (for use) in the treatment of hypertension. This orally effective antihypertensive is believed to act *centrally* to produce a gradual, sustained decrease in blood pressure while increasing blood flow through the kidneys.

2 / 1907M

Ciba



IN URINARY TRACT INFECTIONS

rapid response "Patients with pyelitis were well and doing their usual duties within 24 hours . . ."[1] ". . . resistant cases showed remarkable response."[2]

high urine levels "Terramycin was selected . . . in view of high urinary excretion rate following small oral doses of the antibiotic."[1]

unexcelled toleration "Terramycin is generally well tolerated, the percentage of relapses being low and the percentage of bacteriological as well as clinical cures high."[3]

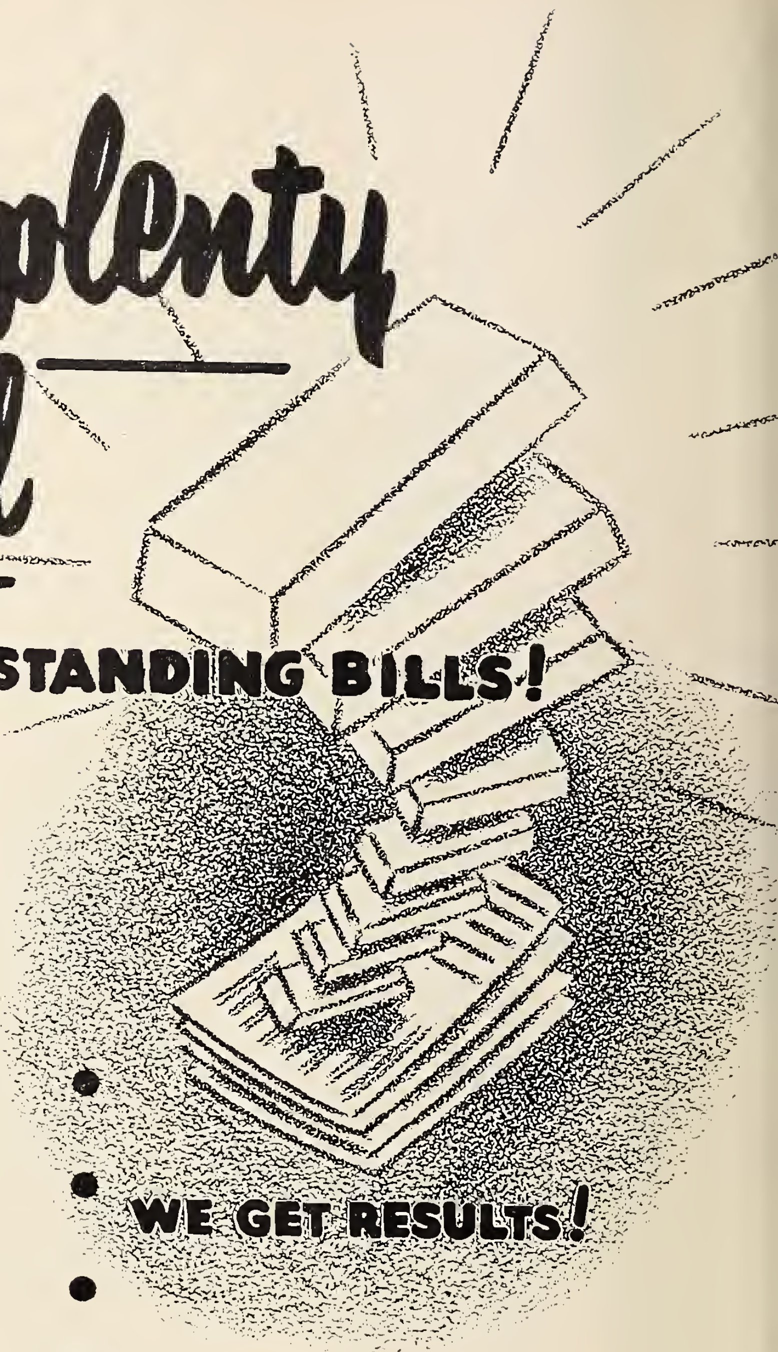
1. Canad. M. A. J. 66:151 (Feb.) 1952.
2. J. Urol. 67:762 (May) 1952.
3. Ibid. 69:315 (Feb.) 1953.

Terramycin

Brand of Oxytetracycline

there's plenty of gold

IN YOUR OUTSTANDING BILLS!


WE GET RESULTS!

If you are dreaming of recovering your hard-earned money from accounts you think are long "dead" or hopelessly lost—

Why not make your dreams come true?

the AMAC PLAN

turns your dreams into reality!

AMAC has proved it to its many clients—large and small—throughout the Mid-west area.
Let us prove it to you.

AMAC is not a collection agency operation.

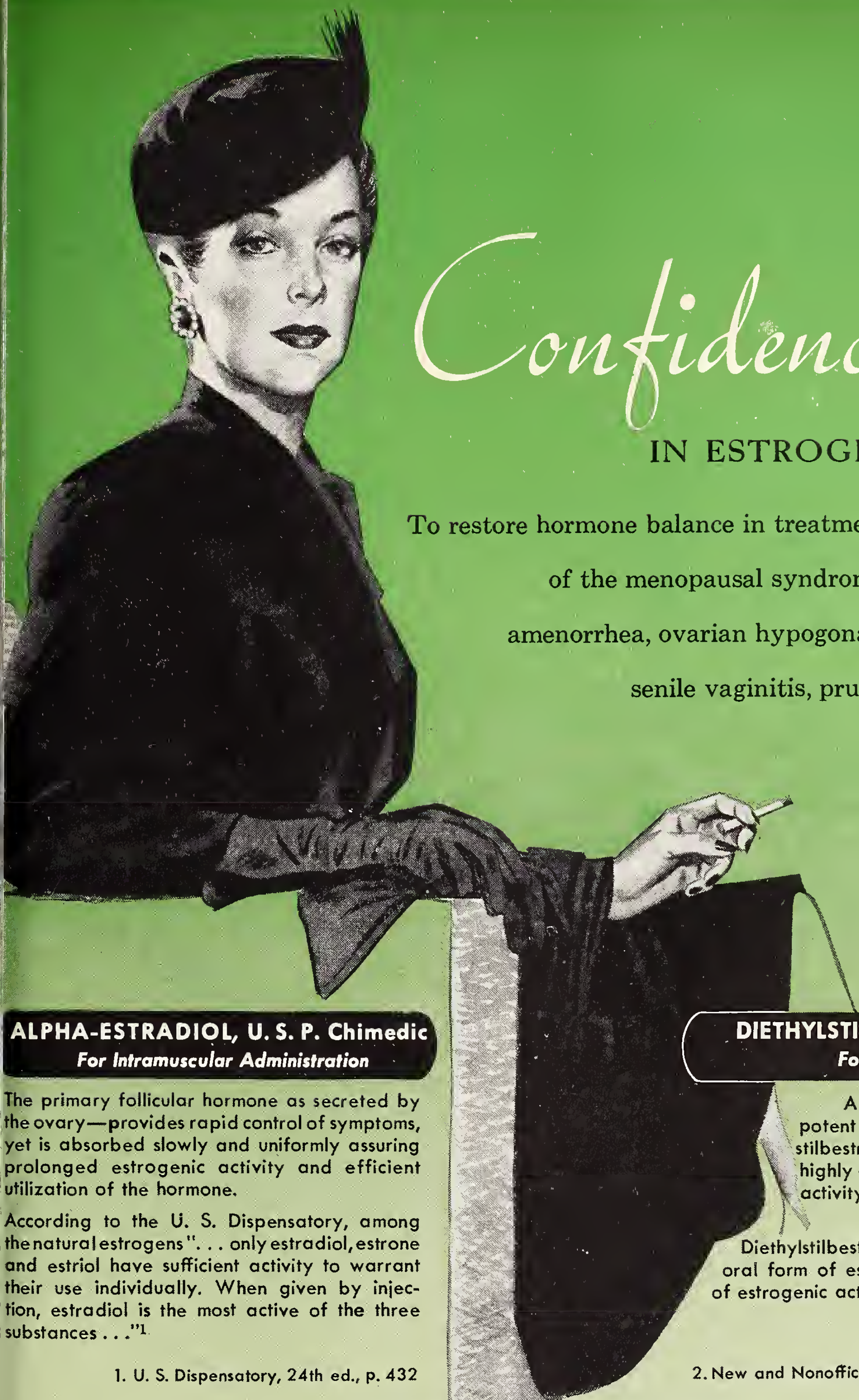
An AMAC representative is available to you upon request. No cost or obligation.
Your interest is invited—
Let us prove the effectiveness of the AMAC PLAN to you.

Allied Medical FIVE STAR PLAN Audit Control, Inc.

Medical • Surgical Dental • Hospital

EXECUTIVE OFFICES

Suite 1118, Commerce Bldg. • St. Paul 1, Minn.



Confidence...

IN ESTROGENIC THERAPY

To restore hormone balance in treatment of the menopausal syndrome, functional primary amenorrhea, ovarian hypogonadism, senile vaginitis, pruritus vulvae . . .

ALPHA-ESTRADIOL, U. S. P. Chimedic
For Intramuscular Administration

The primary follicular hormone as secreted by the ovary—provides rapid control of symptoms, yet is absorbed slowly and uniformly assuring prolonged estrogenic activity and efficient utilization of the hormone.

According to the U. S. Dispensatory, among the natural estrogens ". . . only estradiol, estrone and estriol have sufficient activity to warrant their use individually. When given by injection, estradiol is the most active of the three substances . . ."[1]

1. U. S. Dispensatory, 24th ed., p. 432

DIETHYLSTILBESTROL, U. S. P. Chimedic
For Oral Administration

A pure synthetic estrogen—is the most potent of the stilbene compounds. "Diethylstilbestrol possesses the advantage of being highly active by mouth . . ."[2] "Its physiologic activity duplicates practically all the known actions of natural estrogens."[2]

Diethylstilbestrol Chimedic provides a convenient oral form of estrogenic therapy with uniform level of estrogenic activity.

2. New and Nonofficial Remedies, 1952, p. 342

For the treatment of estrogenic hormone deficiency states, CHIMEDIC hormone preparations satisfy the most exacting requirements for purity, potency and effectiveness.

ACCEPTED
COUNCIL ON PHARMACY AND CHEMISTRY
AMERICAN MEDICAL ASSOCIATION

HIGHLY POTENT **WELL TOLERATED** **RAPIDLY EFFECTIVE**

CHICAGO PHARMACAL COMPANY
5547 N. Ravenswood Ave., Chicago 40, Illinois

Pacific Coast Branch: 1161 W. Jefferson Blvd., Los Angeles 7, Calif.
Northwest Branch: 5513 Airport Way, Seattle 8, Wash.

Visit our Booth No. 86 at the MSMA Annual Meeting, Minneapolis, May 22-28

E. R. SQUIBB & SONS 745 FIFTH AVENUE, NEW YORK 22, NEW YORK

Dear Doctor:

Usually Inadequate

℞
Tolserol Tabs. 0.5 gram
Disp. #100
Sig: One tablet 3 to 5 times a day. Take after meals or with 1/3 glass of milk.

This prescription is typical of many written for Tolserol Tablets*, as seen in a recent prescription survey.

Although some patients will respond to such low dosage, much better results can be obtained by following the recommended dosage: 1 to 3 grams, 3 to 5 times per day.

In accordance with this recommendation, the first dosage schedule for a patient could be:

Better

℞
Tolserol Tabs. 0.5 gram
Disp. #100
Sig: Two tablets 3 to 5 times a day. Take after meals or with 1/3 glass of milk.

Complete information on the use of Tolserol in muscle spasm of rheumatic disorders, neurologic disorders, and acute alcoholism is available from your Squibb Professional Service Representative.

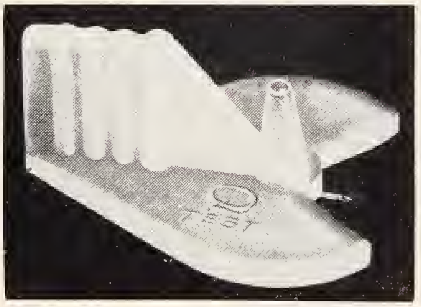
Sincerely yours,
L. H. Ashe
L. H. Ashe, Manager
Professional Service Dept.

'TOLSEROL' IS A REGISTERED TRADEMARK

*Squibb 'Mephenesin'

Now you can tell her in less than an hour

***with the new* Q TEST**



This Modern Pregnancy Diagnosis Is:—

- ★ 96% to 98% Accurate!
- ★ Readily Accepted By Patients!
- ★ Does Not Depend On Animal Reactions!
- ★ Costs Less Than Other Methods!
- ★ Ready For Instant Use.

- ● *We wish to thank doctors of the Minnesota State Medical Association for the way they have received Q-Test.*
- ● *We cordially invite you to stop at our exhibit at the Minnesota State Medical Meeting.*

* * *

Q-TEST DISTRIBUTORS OF MINNEAPOLIS

5921 Dupont Ave. So.

PL. 1603 WH. 9589

50 YEARS AGO

℞ "Two parts of milk to one of water fulfills most of the essential conditions (for infant feeding) if 1 and 2/5 percent of fat = about 2 and 4/5 percent of 50 percent cream – that is, some 15 drops to the ounce – and 3 and 1/2 percent of sugar or about 18 grains to the ounce are added."*

TODAY

℞ One part Baker's Modified Milk
One part water

BAKER'S
MODIFIED MILK
BAKER'S
MODIFIED MILK
For the Bottle-fed Baby
THE BAKER LABORATORIES INC

Baker's Modified Milk is made from Grade A Milk, (U. S. Public Health Service Milk Code) which has been modified by replacement of the milk fat with animal and vegetable oils and by the addition of carbohydrates, vitamins and iron.

BAKER'S MODIFIED MILK SIMPLIFIES INFANT FEEDING

*Cheadle—*Artificial Feeding and Food Disorders of Infants*, Sixth Edition, (1906)

BAKER'S MODIFIED MILK
THE BAKER LABORATORIES INC.
Main Office: Cleveland, Ohio
Plant: East Troy, Wisconsin
Division Offices: Atlanta, Dallas, Denver, Greensboro, N. C., Los Angeles, San Francisco, Seattle

ACCEPTED
COUNCIL ON FOODS AND NUTRITION
AMERICAN MEDICAL ASSOCIATION

ASSURANCE

comes with CONFIDENCE

in the quality of your Surgical Instruments!

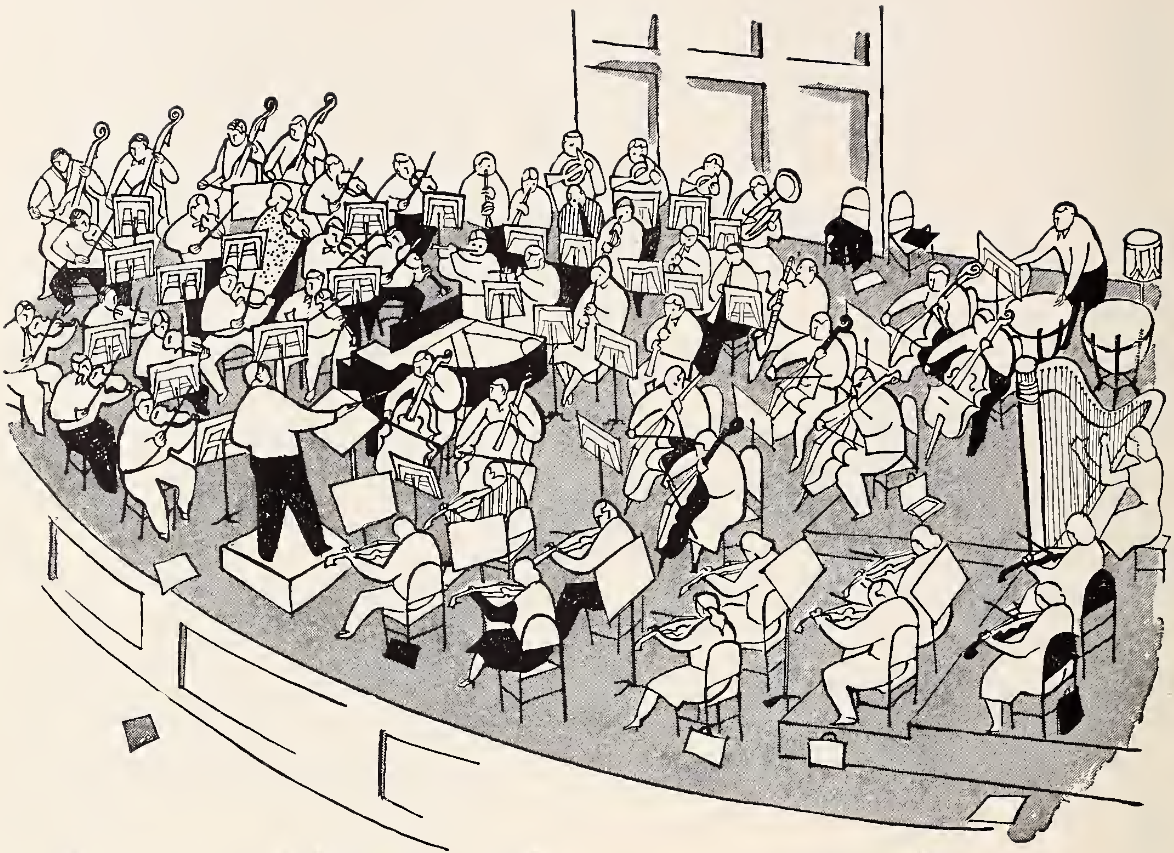
P&H ®

supplies the fine quality instruments that mean so much to every surgeon. In every operation the sharp cutting edge of the scissors, the sure firm grasp of the haemostats and the precise balance of each instrument assures utmost satisfaction.

Remember that P & H is your best source for the world's finest imported and domestic instruments. We have one of the largest and most complete stocks from all the leading instrument makers of Sweden, Germany and the United States.

M-453a

HYSICIANS AND HOSPITALS SUPPLY CO., Inc.
00 HARMON PLACE, MINNEAPOLIS 3, MINNESOTA



they could stage their own symphony

. . . all the patients who represent the 44 uses for short-acting

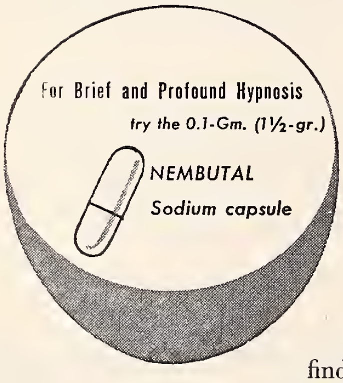
NEMBUTAL®

Ever wonder why one drug should survive 23 years of clinical experience (when a lifetime for many is only about five)? Why it should account for 598 published reports? Or more than 44 clinical uses?

Short-acting Nembutal (Pentobarbital, Abbott) is the drug. The reasons why?

1. Short-acting Nembutal can produce any desired degree of cerebral depression—from mild sedation to deep hypnosis.
2. The dosage required is small—only about half that of many other barbiturates.
3. There's less drug to be inactivated, shorter duration of effect, wide margin of safety and usually no morning-after hangover.
4. In equal oral doses, no other barbiturate combines quicker, briefer, more profound effect.

How many of short-acting Nembutal's 44 uses have *you* tried? You'll find details on all in the booklet, "44 Clinical Uses for Nembutal." Write Abbott Laboratories, North Chicago, Illinois. Abbott



For Brief and Profound Hypnosis
try the 0.1-Gm. (1½-gr.)
NEMBUTAL
Sodium capsule

1-126

Cortisone + = Cortogen

symbol denotes leadership in
roid hormone research and
nufacture -- including Cortogen
the most useful clinical forms.
systemic therapy, use Cortogen
blets or injection.
eye disorders use Cortogen
hthalmic Suspension --
erile. The Schering seal
pears on each tablet and package
your assurance of quality.

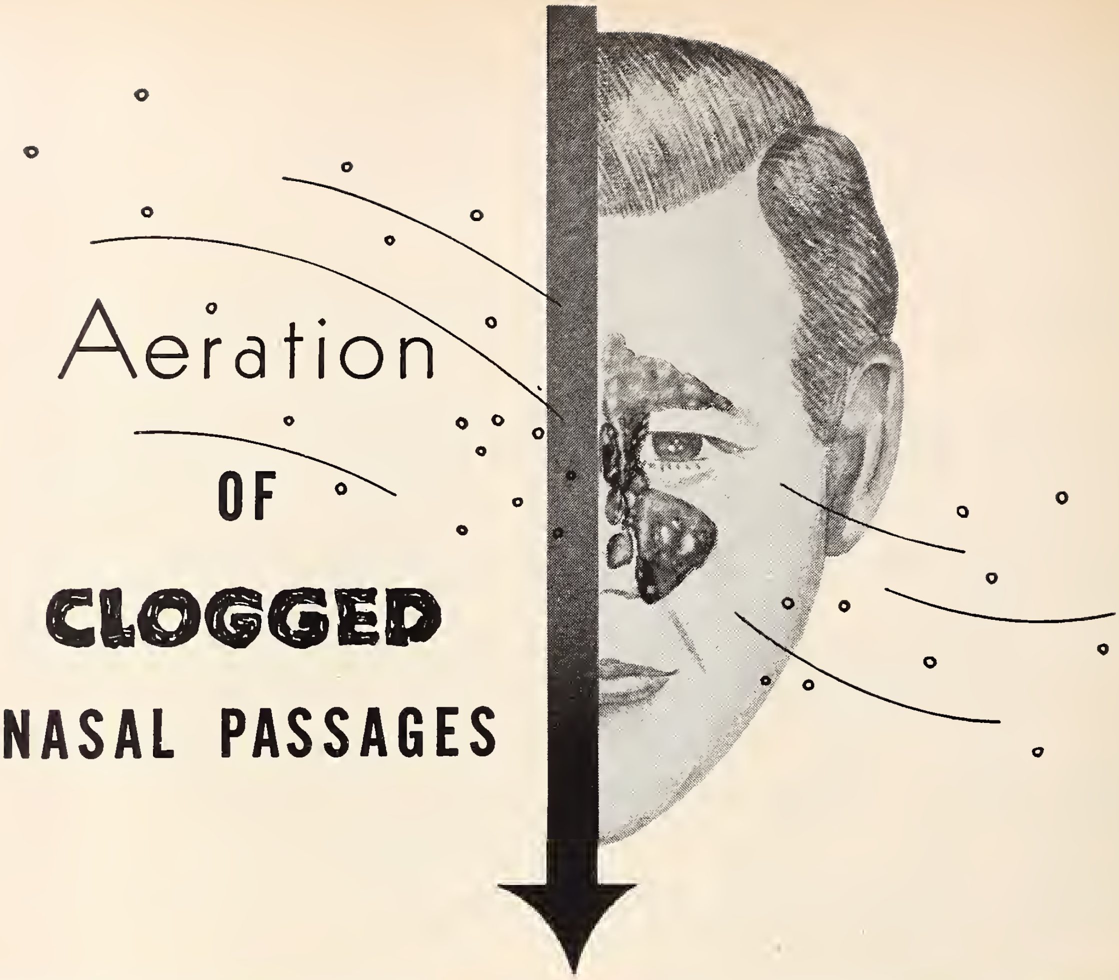
CORTOGEN®

Acetate (cortisone acetate, Schering) Tablets, 5 mg. and 25 mg.;
Injection, 25 mg. per cc., 10 cc. multiple-dose vials;
Ophthalmic Suspension—*Sterile,* 0.5% and 2.5%, 5 cc. dropper bottles.

Schering CORPORATION · BLOOMFIELD, NEW JERSEY
In Canada: Schering Corporation, Ltd., Montreal.

CORTOGEN

Aeration OF CLOGGED NASAL PASSAGES



Breathing comfort as well as proper drainage and aeration of the sinuses during upper respiratory infections is assured by the swift and prolonged decongestive action of

NEO-SYNEPHRINE®

HYDROCHLORIDE

By shrinking the swollen mucosa, Neo-Synephrine permits drainage of purulent matter, restoring free breathing and relieving the headache caused by clogged passages.

RAPID AND PROLONGED ACTION Clearing of nasal obstruction follows within seconds after application of Neo-Synephrine and is unusually prolonged, so that comparatively few daily applications are necessary throughout the course of a cold.

WELL TOLERATED Neo-Synephrine is notable for its relative freedom from sting, virtual absence of compensatory congestion and also has been found relatively free from systemic side effects such as nervous excitation, cardiac reaction or insomnia even when tested on hypertensive, cardiac and hyperthyroid patients.[1]

NO APPRECIABLE INTERFERENCE WITH CILIARY ACTIVITY Neo-Synephrine not only restores nasal patency, but is compatible with ciliary action.

NO DROWSINESS Neo-Synephrine may be used by the ambulatory patient without danger of producing drowsiness or related sedative action. Applied topically, Neo-Synephrine confines its action to the upper respiratory passages.

SUPPLIED:

0.25% solution (plain), 1 oz., 4 oz. and 16 oz. bottles.

0.25% solution (aromatic), 1 oz. and 16 oz. bottles.

0.5% solution, 1 oz. bottles.

1% solution, 1 oz., 4 oz. and 16 oz. bottles.

0.5% water soluble jelly, 5/8 oz. tubes.

●

Neo-Synephrine, trademark reg. U.S. & Canada, brand of phenylephrine

●

[1] Van Alyea, O. E., and Donnelly, Allen: *Arch. Otolaryng.*, 49:234, Feb., 1949.

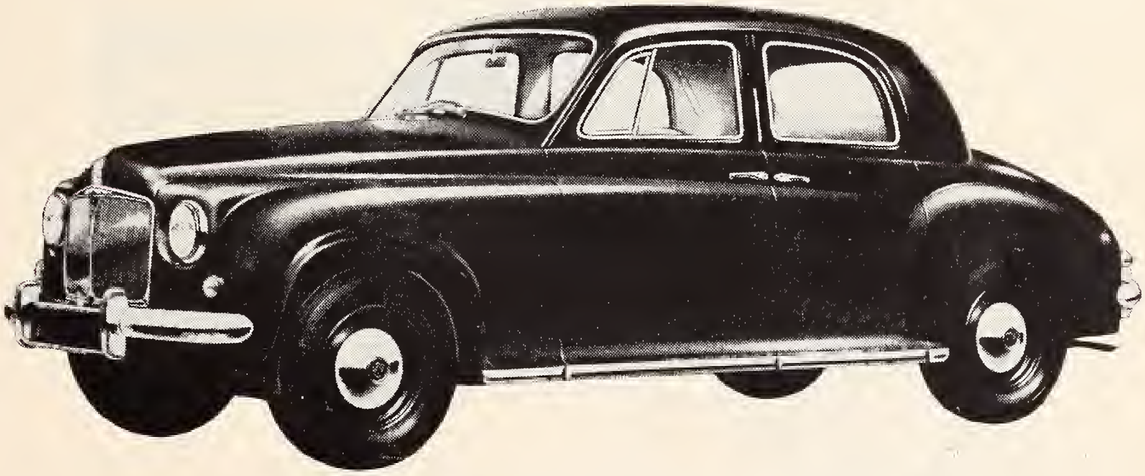
WINTHROP-STEARNS INC. • New York 18, N. Y. • Windsor, Ont.

ROVER "75"

. . . the powerful car with perfect control!

The unique Rover 75 has been faultlessly engineered to give maximum service with a minimum of maintenance . . . it is one of the smoothest running, most luxurious cars on the road today. The comfortable, roomy interior includes top grain leather-on-foam seats that adjust in four directions . . . the thrifty 75 h.p., 6-cylinder engine provides ample smooth, silent power. With chromium plating on the upper ends of the cylinder bores and a lubricated-for-life chassis, the Rover 75 is the automobile designed expressly for those who want perfection in the car they drive!

$2995 *complete, delivered in Minneapolis, includes heater, turn indicators, full kit of tools, etc.*



". . . and I honestly believe (barring the Rolls-Royce) that there is no finer car built in the world today."

statement made about the Rover 75 by Bob Dearborn, Tester, ROAD AND TRACK MAGAZINE

available at

ARCHIE WALKER JR., IMPORTED MOTORS

4317 Excelsior Boulevard, St. Louis Park, Minn. WH. 1101 WH. 6490

also agents for

JAGUAR • MG • MORRIS • BENTLEY • HILLMAN • ALLARD • ROLLS-ROYCE
SUNBEAM TALBOT

new and different salt substitute

...tastes like salt

looks like salt

sprinkles like salt

co-salt

IN

congestive heart failure

hypertension

toxemias of pregnancy

CO-SALT tastes so much like table salt that low sodium diet patients can actually enjoy their food again. With CO-SALT in place of sodium chloride, they will cooperate more fully in following your diet...will be better nourished...and intake of edema-causing sodium will be held to a minimum.

CO-SALT CONTAINS NO LITHIUM . . . is not bitter, metallic, or disagreeable in taste. It is the only salt substitute that contains choline.

CO-SALT — for use at the table or in cooking—will be a joy to low-sodium diet patients.

INGREDIENTS: Choline, potassium chloride, ammonium chloride and tri-calcium phosphate.

Professional Samples
Upon Request

Available:
2 oz. shaker top package
8 oz. economy package

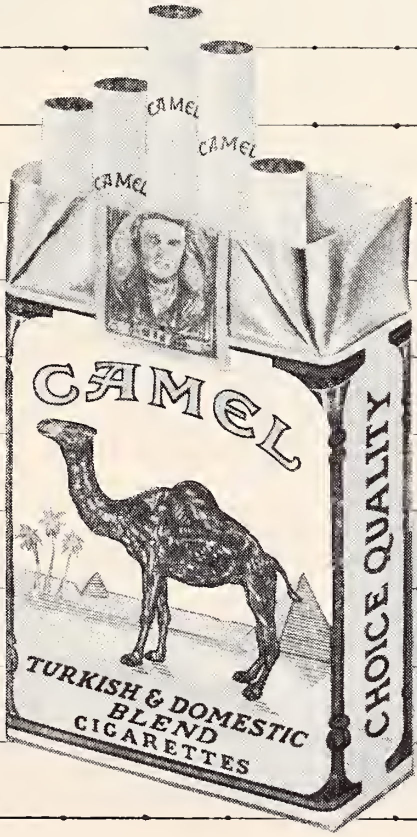
co-salt
co-salt
co

Accepted for advertising in the Journal of the American Medical Association.

Casimir Funk Laboratories, Inc.
affiliate of U. S. VITAMIN CORPORATION
250 E. 43rd St. • New York 17, N. Y.

THERE MUST BE A REASON WHY

Camel leads all other brands by billions!


CAMEL
CAMEL
CAMEL
CAMEL
TURKISH & DOMESTIC BLEND CIGARETTES
CHOICE QUALITY

SO MILD, SO FLAVORFUL!

"PREMARIN"®

Highly effective · Well tolerated · Imparts a feeling of well-being

"PREMARIN"

The menopausal patient
welcomes the sense of well-being
imparted by "Premarin."

"PREMARIN"

Estrogenic Substances (water-soluble)

"PREMARIN"

also known as Conjugated Estrogens (equine)

"PREMARIN"

5209

Ayerst®

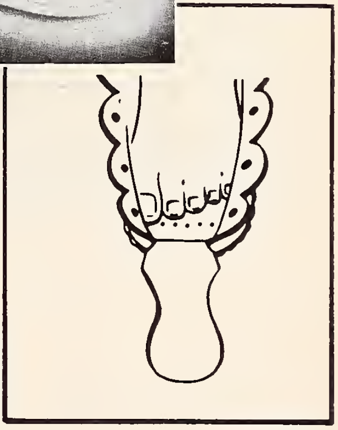
AYERST, McKENNA & HARRISON Limited · New York, N. Y. · Montreal, Canada

A NEW APPROACH TO THE DIFFICULT PROBLEM OF CORRECTLY FITTING *and* PROTECTING PRE-WALKING FEET

tattle-toes are the first improvement in Pre-walking and First-Step Shoes in this Generation.

tattle-toe Shoes are Soft

Tiny feet are tender. Hard, stiff shoes can be most detrimental to soft baby feet. The first quality of babies shoes should be softness. Softness, not only of material, but even more important is the softness of construction. A soft construction is one that produces a shoe that can easily be folded in your hand and then easily returned to its original shape.



VISUAL FITTING

The growth line exclusive in Tattle-Toes provides Mother with a positive gauge to measure the position of baby's feet.

"Today's Health", published by the American Medical Association, has awarded its emblem of acceptance to Tattle-Toes for advertising in "Today's Health".

tattle-toes **CHESTERFIELD, MO.**

ILOTYCIN

(ERYTHROMYCIN, LILLY)

CRYSTALLINE

NOW COUNCIL ACCEPTED

Lilly

The Originator of Erythromycin

Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 36 April, 1953 Number 4

ONE HUNDRED YEARS OF ORGANIZED MEDICINE IN MINNESOTA

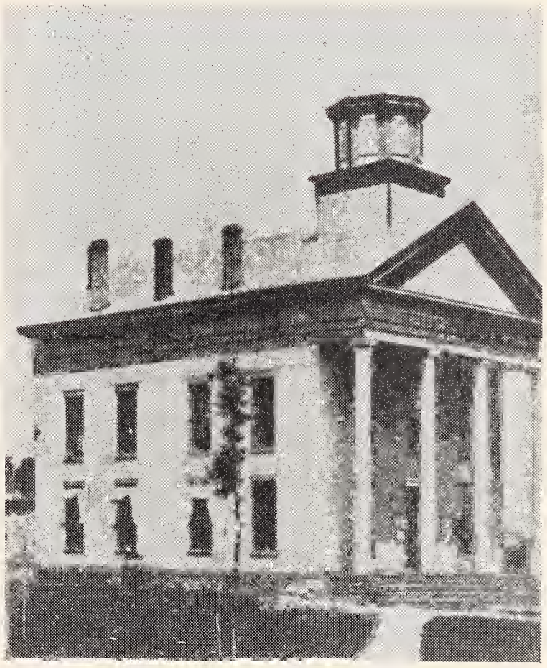
History of the Minnesota State Medical Association, 1853-1953

ROBERT ROSENTHAL, M.D.
Saint Paul, Minnesota

ONE DAY in July, 1853, eleven enterprising young doctors gathered in the fine new Court House of Saint Paul in the Minnesota Territory for the purpose of organizing a medical society. They were men of considerable education, these doctors. Many of them had studied for as much as two years in the university medical schools of Massachusetts, Pennsylvania, New York, Ohio, and at Rush Medical school in Chicago. Quite a few of them had come to the Northwest country for their health.

Ten years before, there had been just one civilian doctor west of Prairie du Chien. His name was Christopher Carli. He had started his long travels into the new world from Heidelberg and finally settled in Stillwater. Now there were fifteen or sixteen, most of them newly arrived from the East. In fact, nothing in previous history matched the speed with which easterners were now pouring into the territory and building up the new town of Saint Paul. Churches and schools appeared like magic; also a bank, a hotel, newspapers and even an insurance company. With equal speed, the doctors, some of whom had hardly had time to hang out their shingles, now set about organizing a medical society.

The political climate was favorable but turbulent times were just ahead. Alexander Ramsey was the territorial governor and Henry Sibley of the American Fur Company represented the territory in Congress. The settlers were mainly traders, lumber men and real estate speculators. All of them were clamoring for an end to the negotiations with the Indians, and the opening of the rich lands in the river valleys to the West and South. The Civil War was less than ten years away and the great land boom which was to collapse in 1857 was in the making.

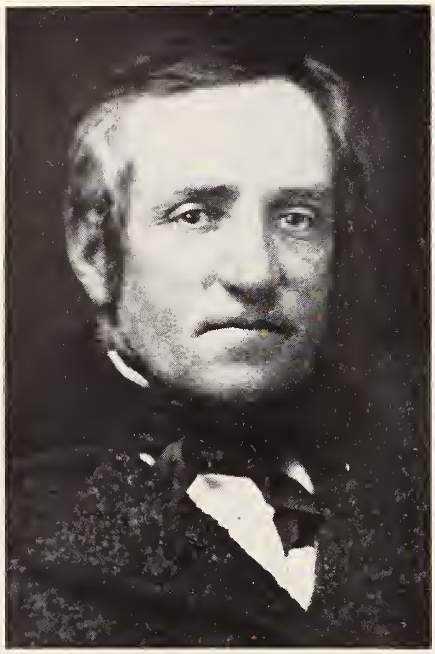

THE COURT HOUSE IN SAINT PAUL
MINNESOTA TERRITORY

Building in which the Minnesota State Medical Association was organized in July, 1853.

The shrill creaking of ox carts still sounded twice a year as the traders journeyed down to the river from the Red River trail of the North. But the doctors who rode to the Court House on that July day were neither traders nor frontiersmen. They were physicians when they arrived at this upper Mississippi outpost and they were destined to play a considerable role as citizens, as well as doctors, in the development of Minnesota.

Dr. Rosenthal is chairman of the Historical Committee of the Minnesota State Medical Association.

A few medical societies in the United States date back to Revolutionary times. The Medical Society of New Jersey was organized in 1766, the Massachusetts society in 1781 and the Medical Society of Delaware in 1789. Perhaps a dozen more societies came into existence in the first half of the nineteenth century including the State Medical Society of Wisconsin in 1841 and the Iowa State Medical Society in 1847.



Dr. Thomas Reid Potts

First President of the Minnesota State Medical Association (then known as the Minnesota State Medical Society).

The settlements and the trails, the river fronts and the trading posts of the new Minnesota territory already abounded in quacks and Indian healers of all descriptions when the call for the first meeting of regular practitioners in Minnesota was published in *The Minnesotian* of July 16, 1853.

"We are requested to state" said this announcement, "that the medical profession of the territory will hold a convention at St. Paul on the 23rd instant."

The meeting was held as announced and the proceedings were published in the *St. Anthony Falls Express* of July 30, in *The Minnesotian* and *The Democrat* of that month, and in the *Northwestern Medical and Surgical Journal* of Chicago in the August issue of that year. A constitution and by-laws, modelled on those of the Pennsylvania and Illinois societies, were adopted. Committees on Arrangements, on the Practice of Medicine, on Surgery, Obstetrics, Drugs and Medicines and on Publication were appointed. Resolutions were passed applauding the stand taken by the National Medical Association on intoxicating drugs and medicines and pledging the new society to cooperate with the national body. Officers were elected and a meeting place selected for the 1854 meeting. All of these will certainly strike the medical ear of one hundred years later as standard procedure for the conduct of medical meetings.

The men who were elected to office that day were already important men in the community. They were headed by Dr. Thomas Reid Potts as president. Dr. Potts was elected President of the Board of Trustees of the town and may well be called the first mayor of Saint Paul. He had been educated at the University of Pennsylvania Medical school. He was a relative of Henry Sibley and a leader in the territory. He came to Saint Paul in 1849 and was perhaps elected because he was much the oldest man present. He was forty-four years old at the time.

The vice presidents were Dr. John H. Murphy of St. Anthony Falls and Dr. A. E. Ames who had established himself across the river from St. Anthony in the settlement which later became Minneapolis. Both were from Rush Medical College in Chicago, but Dr. Murphy had arrived in 1849 and Dr. Ames had been in the territory since 1851. The names of both were to loom large in subsequent history of the society and of Saint Paul and Minneapolis. The corresponding secretary was Dr. T. T. Mann who had come west for his health in 1852 after graduation from the University of Pennsylvania and an extended tour of Europe. Dr. Charles L. Anderson of St. Anthony Falls was recording secretary. Dr. Anderson had come to the territory the year before and was a distinguished naturalist as well as physician. Henry Thoreau was to visit him later in St. Anthony Falls and Minneapolis. The treasurer was Dr. James D. Goodrich of Saint Paul who, like so many others, had come to Saint Paul for his health the year before. He had practiced for several years in Cleveland and was to become Saint Paul's first health officer later on.

The censors were Drs. J. H. Day, W. W. Finch and John J. Dewey. One of these three, Dr. Finch, had come to Saint Paul from Vermont that very year but moved later to Steele County. The other two, Dr. Day and Dr. Dewey, were leading figures in the early history of the territory. Dr. Day was practicing with Dr. Carli in Stillwater at the time. He had arrived in 1847 and had served as the first Register of Deeds and recorded the first deed in Ramsey county. He was also an architect, apparently, since he is said to have drawn the plans for the new court house, built just the year before the meeting. It was an imposing square frame building with a colonaded entrance, and his fee for the plans was reported to be $10. Dr. Dewey, the other censor, came to Saint Paul in 1847. He was educated at the Albany Medical College and he established the first drug store in Saint Paul in 1848. He also had the distinction of being the first physician to settle permanently in Saint Paul.

Members of the Committee on Arrangements were Drs. Murphy and Anderson and Dr. A. E. Johnson who had just arrived in 1853 and had settled in Hennepin with Dr. Anderson. Dr. Johnson came from New York. He was graduated from the Columbia Medical school and he was also a naturalist and ethnologist of note. Later he founded the Minneapolis Academy of Natural Sciences.

The Committee on the Practice of Medicine was composed of Drs. Carli and Anderson and Dr. A. G. Brisbine who had come to Saint Paul from Ohio in 1851, a graduate of Jefferson Medical College.

Dr. Charles McDougall was the military surgeon from Fort Snelling. He had arrived very recently to take the place of Dr. Ames who had served briefly there as contract surgeon, and he was appointed to the Committee on Surgery, together with Drs. Ames and Day. Drs. Potts, Murphy and Mann were named to the Committee on Obstetrics. The Committee on Drugs and Medicines was made up of Drs. Goodrich and Mann and Dr. Samuel Willey, all of Saint Paul. Dr. Willey had come to Saint Paul because of tuberculosis in 1852. He had graduated from Yale and from the Cleveland Medical College and, although he was reported to have arrived with exactly fifty cents in his pocket, he was soon well established in practice with Dr. Brisbine. Promptly he became a dashing figure in Saint Paul society. He was president of the association at the re-organization in 1869, and in 1870 he served as vice president of the American Medical Association.

All of these men were present in person at the meeting except Drs. Carli, Day, Willey, Brisbine and McDougall who were accepted as founding members at their own request.

Dr. A. W. Daniels was there that day, too, by special summons. So was Dr. O. P. Marsh of Saint Paul, according to the account in the *St. Anthony Falls Express*. Dr. Marsh apparently had arrived in Saint Paul only a very short time before, but Dr. Daniels was the only man present from outside Saint Paul, St. Anthony Falls, Hennepin and Stillwater. Dr. Daniels had come from New Hampshire but had graduated from the Medical College of Ohio at Cincinnati in 1853 and had been appointed, at about the same time, assistant surgeon at Fort Ridgley in the western part of Nicollet County. Later he became resident physician to the Lower Sioux in Redwood County. Later still, he moved to St. Peter where he practiced for many years.

The new society chose Dr. Murphy as its delegate to the so-called National Medical Association, and the transactions of the American Medical Association at St. Louis in 1854 duly recorded his presence as delegate from Minnesota. Actually, he was not the first doctor from the upper Mississippi to attend a national medical meeting. Dr. Ames had been at the meeting of 1848; and so had Dr. Daniels, Dr. Marsh and Dr. Johnson. The habit of attending meetings was obviously well established among medical men before the organization of the Minnesota medical society.

It was agreed at that first meeting that the society would meet again in June, 1854; but if the 1854 meeting was held, no record of it remains. The society was evidently regarded as a going concern in 1856, however, because the *Minnesota Republican* of January 17 recorded an election of officers under the caption, "Minnesota Medical Society." Dr. Potts of Saint Paul was still the president; Dr. Murphy of St. Anthony Falls was the vice president. The corresponding secretary was Dr. Goodrich of Saint Paul and the recording secretary was Dr. J. V. Wren of Saint Paul, who had apparently been in the territory for a few years but was more preacher than doctor; he was also said to be more interested in politics than medicine. The treasurer was listed as Dr. Day who had now moved to Saint Paul, and the censors were Dr. Ames of Minneapolis, Dr. Johnson of St. Anthony Falls and Dr. Franklin R. Smith of Saint Paul. Dr. Smith had practiced for a number of years in Pennsylvania before he settled in Saint Paul in 1855. He was a Quaker and greatly respected by fellow practitioners, particularly as an obstetrician. The Committee on Publication was composed of Drs. Ewing (also called R. W. Wing in the Saint Paul City Directory of 1856-57), Marsh of Saint Paul and C. L. Anderson of Minneapolis. The meeting at which these officers were elected was held, according to another account, on January 3, 1856, in Dr. Wren's office.

In the Saint Paul City Directory of 1856-57 virtually the same names appear as officers of the Minnesota Medical Society, though the names of two newcomers, Drs. W. H. Morton and J. H. Stewart, of Saint Paul, are added to the censors and the names of Drs. R. W. Wing and O. P. Marsh of Saint Paul, and Charles L. Anderson of Minneapolis appear as members of a standing committee.

This is the last mention of the society in print at the time, though in the proceedings of the meeting of 1869, at which the society was reorganized, there is the following statement:

> "Two subsequent meetings were held, (after 1855) the last being at St. Anthony in 1857. After that period the society was allowed to languish. The Rebellion broke out and a large number of members entered the service and no meetings have been held, until the call appeared under which the society assembled today at 11:00 a.m. at the International Hotel."

The outbreak of war undoubtedly delayed the re-organization of the society. Most authorities believe it was the panic of 1857 which killed off society activities after that year, however, just as it killed so many business activities of the time. All of the doctors who did not go elsewhere were too busy, for a while, trying to survive the hard times to have any attention left over for medical organization.

When they did meet again it was with Dr. Potts and the officers of the old society in charge. But the picture in medicine, as in the state and the country, had changed almost past recognition. It was 1869 and the Civil War was over. The frontiers had been pushed back far beyond the Mississippi. Minnesota was a state, now, and there were doctors represented, even at this initial meeting, from Red Wing, Rochester, St. Peter, Austin, Albert Lea, Owatonna, Carver, Luverne and Mankato as well as Minneapolis, Saint Paul and Stillwater. Among these new, outstate representatives was Dr. W. W. Mayo who had paused briefly in Saint Paul in 1854, but had pushed on to Le Sueur and then to Rochester.

The notice of the meeting which was printed in Saint Paul papers of January 20 and 21 announced that "business of importance" would be presented. This business of importance was undoubtedly the presentation of a possible medical practice act to be passed by the Legislature, then in session. In due course, a resolution was passed at the meeting to the effect that, "in case the Legislature now assembled desire to protect the citizens of this state against quackery, it is the duty of this society to cooperate with the Legislature and lend its assistance in framing all needful laws upon the subject; and that Drs. Willey, Sheardown, and Stewart be appointed a committee as the organ of the Society for this purpose." But this was not the only business of the 1869 meeting.

The meeting convened with Dr. Potts shortly assuming the chair and Dr. D. W. Hand acting as secretary. Dr. Ames was there representing the 1857 committee of censors and he proposed a list of thirty-nine names for acceptance by the credentials committee made up of Drs. J. H. Stewart of Saint Paul, N. B. Hill of Minneapolis and Dr. Mayo. These thirty-nine men, together with the officers, were seated in the convention. They included Drs. E. J. Davis and J. C. Jones of Mankato; W. W. Mayo and E. W. Cross of Rochester; S. B. Sheardown of Winona; J. A. Allen of Austin; A. W. Daniels of St. Peter; O. Ayer of Le Sueur; N. B. Hill, C. G. Goodrich, Charles A. McCollum, W. F. Hutchinson, J. J. (H. H.?) Kimball, J. H. Churchill, C. J. Dubois, H. A. Dubois, O. J Evans and A. H. Lindley, all of Minneapolis; Samuel Willey, J. H. Stewart, Alfred Wharton, D. W. Hand, S. D. Flagg, Brewer Mattocks, Charles E. Smith, E. H. Smith, A. G. Brisbine, John Steele, M. Hagen, J. B. Phillips, Adelard Guernon, all of Saint Paul; W. A. Griffin and C. E. Rogers of Carver; W. W. Sweney and Charles Hewitt of Red Wing; A. C. Wedge, Albert Lea; J. C. Rhodes and H. F. Noyes of Stillwater and Solomon Blood of Owatonna.

There were differences of opinion as to the procedure to be followed but eventually the convention decided to adopt the old constitution and by-laws and a new set of officers was elected forthwith. They were Drs. Samuel Willey, Saint Paul, president; A. E. Ames of Minneapolis, vice president; Alfred Wharton of Saint Paul and E. J. Davis of Mankato as corresponding and recording secretaries, respectively. The treasurer was Dr. S. B. Sheardown of Winona and the censors were J. H. Murphy who had moved from St. Anthony Falls to Saint Paul, N. B. Hill of Minneapolis, W. W. Mayo of Rochester, A. C. Wedge of Albert Lea, and J. C. Rhodes of Stillwater. There was also a Standing Committee made up of Drs. A. G. Brisbine of Saint Paul, E. C. (or C. E.) Rogers of Carver and J. E. Finch of Hastings. All this was accomplished at the morning session.

In the afternoon, they decided to revise the constitution and by-laws and appointed a committee to do it. They appointed a committee on finances, too, and decided on an assessment of $2.00 a year per member which would certainly be ample to meet current expenses. They decided to have two meetings a year in different localities of the state, a practice which continued for a number of years, and chose Owatonna for the June meeting that year. Three men were selected on the spot to deliver addresses at the meeting. They were Drs. Ames, Hewitt and Kimball and the program, selected by a committee composed of Drs. Hewitt, Noyes and Sheardown, was to be as follows:

"1. Essay on Rheumatism—Dr. Kimball
2. Discussion of Dr. Kimball's essay. Led by Dr. Wharton of Saint Paul and A. B. Stuart of Winona.
3. Discussion of Quackery, Its Diagnosis and Treatment. Drs. Brewer Mattocks and Hewitt of Red Wing were to lead the discussion.
4. Adjournment to 7 p.m. to hear the address by Vice President Ames of Minneapolis.
5. Reports of Committees and Adjournment."

The members also accepted the suggestion of Dr. Blood of Owatonna that every member be requested to report a case from his own practice at each meeting. At his suggestion, also, a committee was appointed, composed of one member from each county, to report on the number of physicians practicing in their respective counties including both regulars and irregulars.

This last committee reported at the Owatonna meeting which convened as planned on June 16, 1869, at Dresser's Hall. The committee had found physicians in practice in Ramsey, Hennepin, Washington, Dakota, Fillmore, Houston, Wabasha, Steele, Olmsted, Goodhue, Winona and Dodge counties. The largest number were in Ramsey and Hennepin counties, though Fillmore and Winona counties were close seconds. The total number of regular practitioners was 119 and the total number of irregulars not recognized by the societies was ninety-three.

The concern of the society of 1869 about irregulars and quacks was therefore not to be wondered at. The legislation developed from the action taken at the re-organization meeting had actually passed the Legislature on March 4, 1869, and high hopes were no doubt entertained for it. The truth is, however, that results were disappointing. In the first place, there was no adequate means of determining whether or not a diploma had been forged or stolen. Furthermore, the country was overrun with obscure, inadequate diploma mills. Also, there was the State Homeopathic Institute, founded in 1867, which was given the same right of conferring degrees as any medical school. But the homeopaths, instead of restricting their diplomas, bestowed them upon any passing quack who expressed a belief in homeopathy. The result was that the doctors who had worked to secure passage of the act of 1869 now worked just as hard to secure its repeal; and Minnesota had no further medical practice act on its books until 1883.

At the Owatonna meeting, Dr. J. C. Rhodes of Stillwater introduced a motion prohibiting admission of any person to membership in the society who could not produce satisfactory evidence of being a legal practitioner of medicine. The resolution was adopted, but the amount of discussion showed how difficult the whole matter of applying standards was, even among so-called legal practitioners. In fact, Dr. Mattocks' scheduled discussion of "Quackery" precipitated such a lively debate on what was and what was not quackery that the whole matter appears to have been dropped in favor of less controversial subjects such as typhoid fever.

It is interesting to note that the president, Dr. Willey, offered two prizes out of his own pocket for competition among the members. One, for $50, was for the best essay on "Epidemic and Endemic Diseases of Minnesota." The other, also for $50, was for the best essay on "Cerebro-spinal Meningitis." These prizes figured thereafter for some years in the proceedings of the society. There was seldom any competition for them and only one essay was submitted, usually, for each prize. The first winner, Dr. W. W. Sweney of Red Wing, won both prizes and endorsed his winnings over to the society to establish a "prize fund."

The February meeting of 1870 was notable for the adoption of an amended constitution and by-laws which set up an elaborate mechanism for examining prospective members for the diploma of membership in the Society. Thirty new members from many parts of the state were accepted for membership and the first presidential address, provided for in the amended constitution, was given by Dr. Willey. It was a genuinely distinguished address with overtones that were to be heard, year by year, to this day in the addresses of his successors.

Dr. Willey called for the keeping of vital statistics by the members themselves, since there was no other agency to do it. He called for specialism, but with a sound basis of experience in all fields of practice. Also, he called for laws to curb quackery and for strict adherence to the code of ethics of the American Medical Association in the relationships of members to each other and, especially, to younger men just entering practice. It is worth noting that the special committee appointed to report on the president's address, while heartily approving most of his suggestions, sadly remarked that laws regulating the practice of medicine "do not and cannot reach the cause of the success of quackery among the people, but that the cause is to be found in the deficient knowledge on the part of the people in regard to the real ground upon which the practice of medicine rests, and that, so long as that deficiency exists, quackery will flourish. If legislative action is to be had, it should be directed to the removal of that cause." Dr. Charles N. Hewitt of Red Wing who was soon to become the head of the first state health department, signed the report as chairman. Both Dr. Willey and Dr. Hewitt were paving the way, however, for establishment of two fundamental functions of their association in the next half century, to foster protective legislation and also to foster public education as a means of destroying quackery.

To follow the year-by-year history of the Association from 1870 is obviously impossible in a brief review. The extended history of the Association by Dr. Arthur S. Hamilton was published serially in MINNESOTA MEDICINE beginning in January, 1942. That account and Dr. Hamilton's History of the Hennepin County Medical Society and the History of the Ramsey County Medical Society by Dr. J. M. Armstrong, as well as histories of other county societies of the state, published from time to time over a period of several years in the same journal, should be read for their delightful detail about the life and times of the men who founded and carried on the Association, as well as for the continued story of its development.

From the year 1870, meetings were held regularly at the scheduled times, with more and more men from all over the state participating in the program. Scientific papers began to take on a far more varied and extensive character each year. Their subject matter accurately reflected the tremendous development of scientific medicine in Minnesota and the world outside.

In the early years, Minnesota doctors were greatly preoccupied with consumption and the effect upon it of Minnesota's climate. Many of the early physicians suffered from tuberculosis and came to Minnesota in the hope of being cured. Newspapers refused to admit that lung disease could exist in the territory and some of them, like the *St. Anthony Falls Express,* exhibited actual hostility to the coming of doctors to the territory. They were regarded as useless except, perhaps, to aid the midwives and to bandage the wounds of Indians. The doctors, themselves, soon recognized the fact that Minnesota air, alone, was not accomplishing the expected miracles. For a while they temporized with the assumption that the scent of pines had a therapeutic effect and that, when the pines were cut down, the effect was dissipated. In 1872, however, Dr. Hewitt reported to the American Medical Association meeting of that year that persons with developed phthisis could not expect relief from Minnesota's climate.

Cholera appeared in the territory in 1849 and became epidemic in 1854. Typhoid fever was a constant problem. So were smallpox, diphtheria and rheumatism. Surgeons practiced without the aid of anesthetics, though many of them were undoubtedly aware of the properties of ether, since Long's first use of it in a surgical operation had taken place in 1842 and Morton's famous operation had occurred in 1846. In 1854 Dr. W. W.

Finch of Saint Paul made this announcement in the newspaper: "Being familiar with the Use of Ether, operations in surgery will be performed under its influence without pain, if desired."

Many other great milestones of medicine were established in the years between 1853 and the turn of the century and news of them reached the frontiers of America with remarkable speed, considering the difficulties of communication. Preventive medicine received a great boost with the establishment, through the efforts of the Minnesota State Medical Society, of a state board of health, the third such board in the entire country. Only Massachusetts in 1867 and California in 1870 had preceded it. The act was drawn up at the society's meeting of 1872 in Saint Paul. The society also proposed a bill legalizing dissection at that meeting. Both were passed by the Legislature, though not without a fight. Dr. Hewitt was made secretary and continued in the post until 1897 with a salary, the first year, of $200, a figure which was no measure of the energy, devotion and progressiveness which he brought to the office. Largely due to his pioneering efforts, and the efforts of the individual members, vaccination got an early start in Minnesota. Within a relatively few years, smallpox ceased to be a major preoccupation of the members at their meetings. Diphtheria continued to be a source of worry. At the seventeenth meeting in 1885, Dr. A. E. Spalding of Luverne reported on the use of antitoxin in seven cases, "too few for sufficient proof," he said, "but . . . I cannot help but feel that we have reason to take courage." A committee reported on the use of it in 643 cases the next year, with a drop from a 16.17 death rate to 12.09; but acknowledged that many of the patients were treated too late and with too small a dosage. Few who were present that year had had any clinical experience with the marvelous new treatment, but by 1898, the same committee was able to report "that no remedy ever came to trial that stood the test and became standard so soon."

Antiseptic surgery or "Listerism," as it was called, had considerable prejudice and opposition to overcome in Minnesota, as elsewhere. Lister had begun his great work in antiseptic surgery about 1870; but at the twelfth annual meeting of the Minnesota State Medical Society in 1880, Dr. A. C. Wedge of Albert Lea devoted his entire presidential address to Listerism and regretted that he had been "unable to learn of a single case in which the Lister method had been followed in Minnesota." At the same time, he did think that a large number of men were using disinfectants to some extent.

Dr. Perry H. Millard of Stillwater was president at the fifteenth annual meeting of the Association in 1883 and he devoted his entire presidential address to the work of Pasteur and Lister and the new bacteriological science. "We hope denunciations of Lister have now reached their height," said Dr. Millard, "and we prophesy fame next to none for Dr. Lister."

The year 1883, and the presidency of Dr. Millard, marked another milestone in the history of the Association and of medical practice in Minnesota. In that year, with the backing of W. W. Folwell, president of the new University of Minnesota, Dr. Millard and Dr. Hewitt organized a special examining board for physicians in connection with the University, and secured passage of another medical act. No actual medical teaching had yet been inaugurated at the University. Candidates for examination came from private schools. Each year, Dr. Millard reported to the society, at its annual meeting, on the progress of the new board. Two hundred unqualified physicians had left the state rather than face examination, he reported in 1884. In 1883, there had been 1,183 physicians in the state of whom at least one-third were irregulars. In 1886, he reported only 995 physicians remained. Of eighty-six examined that year by the board, only one had been licensed to practice. The tremendous task of standardizing medical schools and cleaning out the diploma mills was going on under the guidance of the American Medical Association and, apparently, graduates of only seventeen schools were being recognized by the Minnesota board.

In 1887, Dr. Millard, with the aid of the society, persuaded the Legislature to create an independent Board of Medical Examiners in which was vested the exclusive right to admit to practice in Minnesota. It was the first act of its kind to be adopted anywhere in the United States and it signalized the later advancement in medical licensure in Minnesota. Having cleared the way for proper licensure of its students, the University was now ready to establish its medical school and Dr. Millard set out to persuade the private schools, the Minnesota Hospital College of Minneapolis, the Saint Paul Medical College and the Minnesota College of Homeopathic Medicine, to merge into a single department of medicine at the University.

It was thus that Dr. C. F. McComb of Duluth was able to hail the inauguration of medical teaching at the University in his presidential address of 1888. He threw the weight and influence of the organization behind the new school and Dr. Millard.

The seven league strides made in surgery during those years were facilitated, of course, by anesthesia and Listerian methods of antisepsis and by the growth of hospitals. They were also facilitated by the emergence of a series of great surgeons in all parts of the country, but especially in Minnesota. These men all took part in all activities of the society. Among them were Drs. C. A. Wheaton of Saint Paul, F. A. Dunsmoor of Minneapolis, Dr. Millard, who was Dean of the new Department of Surgery at the University, Dr. Arnold Schwyzer of Saint Paul, Dr. W. W. Mayo and his two famous sons, Drs. W. H. and C. A. Mayo of Rochester, all of whom were prominent on society programs and most of whom served as its president. In this connection, it is also interesting to note that a Minnesota surgeon, Dr. Justus Ohage of Saint Paul, performed the first successful operation in America for removal of the gall bladder.

The first mention of x-ray on any society program came in 1896. Dr. A. A. Law of Saint Paul showed the first shadowgram that year and, in 1897, appeared to be the only one in the state using the new kind of picture as an aid to diagnosis.

Membership in the society increased steadily from 119 in 1869 to 357, when Dr. Wheaton reviewed the history of the organization as president in 1889. The burning question of whether or not to admit women to membership had been discussed from time to time, with varying degrees of sarcasm and downright horror, from the year 1873 when Dr. Harriet E. Preston of Saint Paul had applied. By 1880, however, resistance had been worn down and women were admitted by a vote of thirty-nine to three.

The society continued, year after year, to affirm its adherence to the Code of Ethics of the American Medical Association. Advertising by regular practitioners had ceased fairly early; and when a member was expelled, for the first time in the history of the state society in 1891, it was for advertising. Fee splitting was also distressing the ethical and pressing for action. A resolution explicitly condemning it was passed in 1900, but it continued to plague the officials of the society.

As early as 1893, a yearly salary of $100 each, was paid to the secretary and the treasurer of the association and the dues skyrocketed in that year from $2.00 to $3.00 a year, though they were not to remain at that inflationary figure for long. In that year, also, there were county and district medical societies covering the entire state, but they were called "auxiliaries" to the Minnesota State Medical Society, and the ties between them and the state society were extremely loose.

Officers were inclined to watch in despair the successes of irregular medical cultists with the Legislature, powerless because of the lack of unity among the doctors, though the latter were far more numerous in the state.

A movement was already on foot, however, which provided for real unity and the basis for medical organization as it exists today. The American Medical Association had drawn up a constitution and by-laws for all state and county medical societies which created a close, functional relationship, at all levels of organization, and which was to become the envy of all other professional organizations. This new constitution had already been accepted in a number of eastern and southern states and was presented to the Minnesota society, officially, for the first time in 1902. Its introduction coincided with a meeting of the American Medical Association in Saint Paul. A mild preparatory measure was all that was taken at the 1902 meeting. In 1903, however, everybody seemed to be ready for the conversion and the state and county society relationship, as we know it today, came into being. Overnight, the county, instead of the state organization, became the basis and the most important unit of the state and national organization. The state was parcelled off, at the same time, into eight councilor districts with an elected representative from each making up an executive body called a Council. Each county and district society was to elect representatives, according to its size, to a House of Delegates which should meet at least annually, determine policies and elect officers. All members were to be accepted or rejected as the county unit saw fit and county and district society members automatically were accepted as members of the state and national organization.

The advantages of this close-knit organization seem so obvious that it is difficult, now, to understand how much spadework was necessary to make it a working reality. Some members of the "auxiliary" societies were especially stiff-necked about merging their interests with others and were heard to murmur, inevitably, about "a little group" that was running things in the state society. There was, however, the scandalous situation, recognized by all, whereby a man who had been refused membership in his home society might be accepted by a distant society, which was unaware of his past, and so reap the advantages of acceptance by organized medicine.

Dr. J. N. McCormick of Bowling Green, Kentucky, chairman of the American Medical Association's committee, sparked the campaign for the new organization. He was ably seconded by many distinguished Minnesota doctors, among them, Dr. Arthur Sweeney of Saint Paul, who had served as chairman of the Society's Committee on Legislation, and who spoke feelingly of the political weakness of the profession in the state. "We are one in our antipathies," he had remarked with some bitterness in an address before the society in 1902, "and there our unanimity ends. We have no real unity of effort and, without that, our prejudices only serve to belittle us and expose us to the ridicule of the public. Our prosecution of the illegal practitioner is so ill-directed and so tinged with personal feeling as to take on the appearance in the public eye of petty persecution."

When the new plan was accepted in 1903, a real burden was placed upon the shoulders of the new councilors. Upon them, chiefly, rested the responsibility for bringing their county and district societies into the new scheme, of extending membership, of organizing new units and of explaining the objectives of the new movement.

Because the job was done well and with astonishing speed, considering the difficulties, those first councilors deserve credit and recognition. Their names and districts were as follows: First District, Dr. Eugene A. Hensel, Alexandria; Second District, Dr. Walter Courtney, Brainerd; Third District, Dr. William S. Fullerton, Saint Paul; Fourth District, Dr. Frederick A. Knights, Minneapolis; Fifth District, Dr. Harper M. Workman, Tracy; Sixth District, Dr. Alfred E. Spalding, Luverne; Seventh District, Dr. Franklin A. Dodge, Le Sueur; Eighth District, Dr. Adolph O. Bjelland, Mankato. Dr. Fullerton of Saint Paul was the first chairman.

The constitution of 1903 remains the basis of organization today, though it has been altered a little, from time to time, to meet the altered conditions of fifty years. Membership has expanded from about 400 in 1903 to 3,223, as of January, 1953. The modest budget of $4,330 has substantially increased, but so have the dues, although they were reduced to $2.00 again in 1903. Dues were to be increased only by a four-fifths vote of the House of Delegates, according to the new constitution. The program of the society, called an "association" after 1903, has expanded almost beyond the recognition of those early stalwarts, but not beyond their imagination. In their enthusiasm, they foresaw great developments for their organization when their membership should be unified.

That unification has been accomplished to a degree which is the admiration of most people, though it is viewed with alarm by those who oppose the program and aspirations of organized medicine in the United States.

The program has reached out in all directions to implement the interests of medical men. It stretches far beyond medical matters, to the education of the public, as well as the education of the physician; and to the maintenance of high standards in teaching, practice, and hospital care. It stands in the front rank of all movements calculated to improve the public health.

This expansion soon made the part-time secretary, who carried on his practice in addition to the work of the association, impractical. Dr. Thomas McDavitt of Saint Paul accepted the job on a part-time basis in 1900. He was succeeded by Dr. Earle Hare of Minneapolis and, later, by Dr. Carl B. Drake of Saint Paul, in 1921. In 1925, Dr. E. A. Meyerding took over the post in connection with his duties as executive secretary of the Minnesota Public Health Association. That arrangement was outgrown, too, and in 1938 the Minnesota State Medical Association established its own headquarters, which have since been greatly expanded, in the Lowry Medical Arts Building in Saint Paul. In that same year, Dr. B. B. Souster became secretary of the organization, with a full-time executive secretary, Mr. R. R. Rosell, as aide and operating head of the organization. This last move was in

(Continued on Page 370)

MEDICAL SCHOOLS AND MEDICAL EDUCATION OVER THE PAST CENTURY

HAROLD S. DIEHL, M.D.
Minneapolis, Minnesota

THAT GOOD medical practice depends primarily on sound medical education was officially recognized by the medical profession of this country more than a century ago when the newly established American Medical Association set the improvement of medical education as its primary objective. Achievements since that time have been truly phenomenal, so that today medical education in America is recognized as outstanding in the world.

Pioneer Medical Education

A century ago medical education in this country was truly in its infancy. The medical schools of the University of Pennsylvania, of Columbia University and of Harvard University, were established prior to 1800. However, only 20 other medical schools of the 72 currently functioning in this country were in existence a 100 years ago, and of these only three, Washington University in St. Louis, Western Reserve University in Cleveland and the University of Michigan, were in the mid-west. None was in the far west.

TABLE I. ESTABLISHMENT OF MEDICAL SCHOOLS IN THE UNITED STATES

Prior to 1800	3
1800 to 1853	20
1853 to 1903	31
Since 1903	18
Total	72

The lack of medical schools in the west, or rather of medical schools which have persisted, does not mean that prior to 100 years ago there was no medical instruction in these great areas. In those early days medical education like everything else was truly on a free enterprise basis and completely unregulated. Any physician who wished to do so could set himself up as a preceptor for the training of medical practitioners. And practically any group of physicians could start a medical school if they so desired, and many did.

Unquestionably many preceptors and many physicians who organized medical schools were sincerely and conscientiously attempting to meet the need for medical instruction in a frontier country. There is an amusing story of the preceptor of this era who told three or four students who had been studying with him for several years that their training was completed and that they were now ready to undertake the practice of medicine on their own responsibility. He explained that he had done the best he could for them. He had made his books available for their study and he had tried to teach them all that he could about the practice of medicine. But, he said, "There are two things about this that trouble me. One is, that I am sure that half of what I taught you is wrong. This troubles me, but the other troubles me more. That is, I am not sure which half it was."

Unfortunately, not all the preceptors nor all the physicians who organized medical schools were motivated by altruism. Some saw rather the obvious advantages of having the services for several years of devoted unpaid and willing assistants; some coveted the prestige of being known as a professor of a medical school; and some profited substantially from the fees paid by the students for their instruction.

Concerning this era of medical education, Abraham Flexner in his epoch-making report on Medical Education, said:

> "A third type (of medical education), already so discredited as to have become absurd, is associated with the new world, where an unprecedentedly rapid expansion of population over an enormous territory created a demand for doctors long before there existed facilities for their proper training or means for their support. The inevitable happened. Loose and shifting bands of practicing physicians calling themselves a faculty, tried to impart, chiefly by lectures, to heterogeneous uneducated groups of students the empirical knowledge—sound and unsound—which they themselves possessed. First and last, American towns have produced over 400 such medical schools. . . . Pioneer conditions explain how the physicians of that day came to manufacture by the thousands doctors who had small chance to acquire either knowledge or skill. Proprietary medical schools of the United States were mainly private businesses. A few of them—Harvard and Pennsylvania—for example, were in name and in law university departments, but lacked university standards, ideals and facilities."[3]

"During this era of proprietary medical education the

Dr. Diehl is Dean of the Medical Sciences, University of Minnesota.

> standards of admission were so low that Dr. Charles W. Elliott remarked, upon becoming president of Harvard in 1869, that anyone who chose could come in off the street and enter the Harvard School of Medicine. The medical curriculum consisted of courses of lectures running through four months of the year, repeated year after year. President Elliott proposed to substitute instruction which would be progressive and continue for a period of nine months each year instead of four. He further suggested that no candidate should obtain a degree without passing a strict written examination in all the chief departments of instruction, instead of five out of nine as had been previously required. The head of the Medical School was so disturbed at the changes recommended that he declared that the young president was about to wreck the school, and that it would cease to exist in a year or two if such revolutionary reconstruction were allowed. 'He actually proposed,' said this professor, 'to have written examinations for the degree of Doctor of Medicine. I had to tell him that he knew nothing about the quality of Harvard Medical students. More than half of them can barely write. Of course they can't pass written examinations.'
>
> "At the very beginning of his Harvard presidency, Dr. Elliott began the struggle to make the Harvard Medical School a general university department in the true sense. Similar steps were subsequently taken elsewhere. The movement did not, however, gain momentum until in the last decade of the century when Johns Hopkins Medical School, a university faculty in approximately the German sense, made a success in Baltimore."[2]

In the upper Mid-West, the first charter granted to a medical school seems to have been in 1848 when the Madison, Wisconsin, Medical College was incorporated. This school never admitted any students, but later in the same year "a branch" of this college was opened at Rock Island, Illinois, under the name of the Rock Island Medical College. At the opening of this school Dean Knapp announced:

> "No honor could be more congenial to my feelings, for since enduring some fifteen years of toil in the profession in Illinois to find myself at last in this El Dorado of the flow'ry West, on the banks of a river lovelier than the "Blue Moselle," presiding as accoucheur at the birth of a new institution of medical learning, pure, promising, and undefiled by perfidy, comely in every feature and limb, matchless, indeed at her birth, is to me a source of more unalloyed happiness than I could enjoy were I elected to the Chief Magistracy of a State."[4]

In spite of this oratory on the part of the dean, the school remained at Rock Island for only one term of three months, at the end of which it conferred two Doctor of Medicine degrees.

The Rock Island school moved next to Davenport, Iowa, where it was named the College of Physicians and Surgeons of the Upper Mississippi. Within a few months it moved again. This time to Keokuk, Iowa, where it obtained affiliation with the State University of Iowa. In this location it functioned for more than fifty years, until 1908, when it merged with Drake University at Des Moines. Meanwhile, in 1869, the State University of Iowa organized a College of Medicine in Iowa City. Finally, in 1913, the Drake School merged with the school at Iowa City to give the state a single strong medical school.

In Wisconsin, a second medical school was organized in Milwaukee in 1850 under the charter of the infant State University. However, this school like the one in Madison never opened its doors to students. Four years later, the Regents of the University of Wisconsin created a department of medicine, but it was not until 1907 that the first class was admitted for instruction in the basic medical sciences and not until 1925 that the clinical years of the medical course were added.

Beginnings of Medical Education in Minnesota

In Minnesota, a medical school was authorized by the territorial legislature of 1851 and by the state legislatures of 1868 and 1872. It appears, however, that the first effort in organized medical education in Minnesota was the establishment in 1871 of "The Saint Paul Medical School—Preparatory." Concerning these early days, Dr. J. A. Stewart of Saint Paul wrote:

> "My earliest recollection of anything that even simulated organized medical instruction in Saint Paul was when, in 1868 or 1869, the students, reading in the different doctors' offices, met in the second story of the little stone dead-house, which stood to the left of the original building of St. Joseph's Hospital. It contained a table, chairs, and the inevitable skeleton. Dissections of amputated limbs, et cetera, from the hospital were made there, and regular instruction was given by members of the staff, of whom I recall Dr. D. W. Hand and my father."[4]

The President of the Saint Paul Medical School Preparatory was Dr. Alexander J. Stone. The course of study was four months in length and was not designed "to represent or to take the place of the work of a regular college, but to prepare the students for better understanding of the lectures they would hear in the college course." The hours of instruction were six a day, from 3:00 to 10:00 p.m.

Also, in 1871, a second medical teaching enterprise was organized in Minnesota as the Winona Medical School, Preparatory. "Both of these preparatory schools continued their missionary efforts until 1878, neither of them undertaking to do more than the self appointed task of bettering the educational status of the profession; graduating no students; conferring no diplomas; boasting no alumni; but remembered by many a physician whom they helped in their unpretentious fashion, for better understanding of and a better preparation for his life work."[4]

Dr. Perry H. Millard

Upon the discontinuance of the Saint Paul Preparatory Medical School a group of the faculty organized the Saint Paul Medical School, "which had for its college building rented rooms over a saloon on Third Street, opposite and near the Metropolitan Hotel, in Saint Paul." The following year this school became the medical department of Hamline University. Initially the requirement for a degree was a course of study of two years of twenty-six weeks each. Within a few years, however, the length of the course was extended to three years.

This college was officially discontinued in 1881 when its faculty joined with other Minneapolis and Saint Paul physicians to organize the Minneapolis College Hospital. This occupied "a part of the magnificent building known as the old Winslow House, situated in east Minneapolis." The length of the college term was first announced as eighteen weeks. It was later lengthened to twenty-two weeks.

The University of Minnesota Medical School

The Regents of the University of Minnesota took the first step in the establishment of a medical school on January 5, 1883, when they authorized the organization within the University of a college or department of medicine. This department of medicine, according to the plan prepared and submitted by Dr. Charles N. Hewett, then state health officer, Dr. William H. Leonard, a prominent Minneapolis physician, and President William W. Folwell of the University, initially was a purely examining body, having no teaching functions. The legislature in this same year passed an Act to Regulate the Practice of Medicine in the State of Minnesota. This act required that physicians be licensed in order to practice within the state and conferred upon the faculty of the Department of Medcine of the University the functions of an examining board.

Also, in 1883, there was organized in Minneapolis another private medical college under the name of the Minneapolis College of Physicians and Surgeons. Twelve years later, this college became the medical department of Hamline University.

On April 7, 1887, a committee of physicians urged the Board of Regents at the University to establish a teaching school of medicine, and on January 28, 1888, the Regents accepted the offer of the trustees of the Minnesota College Hospital and the Saint Paul Medical School to surrender their charters and to use their properties for a period of five years. On March 8 of the same year, the Regents accepted the offer of the trustees of the Minnesota Homeopathic Medical College to surrender its charter to the University of Minnesota. These three colleges were combined, and the College of Medicine and Surgery of the University of Minnesota was established by the Board of Regents on March 16, 1888.

Concerning the amalgamation of these independent medical colleges into a state university medical school, Dr. Cyrus Northrop, then President of the University, in an address delivered in 1908, stated:

> "The credit for organizing this college, by combining the best men of the various independent medical colleges into a new faculty of the university, and securing the retirement of independent colleges from the work of teaching, so as to give the Medical College of the University a practically clear field, belongs to Perry H. Millard, the first Dean of the College. The pertinacity,

firmness, skill and tact displayed by Dr. Millard were wonderful, and success crowned his efforts at last, although I had often thought he would fail."

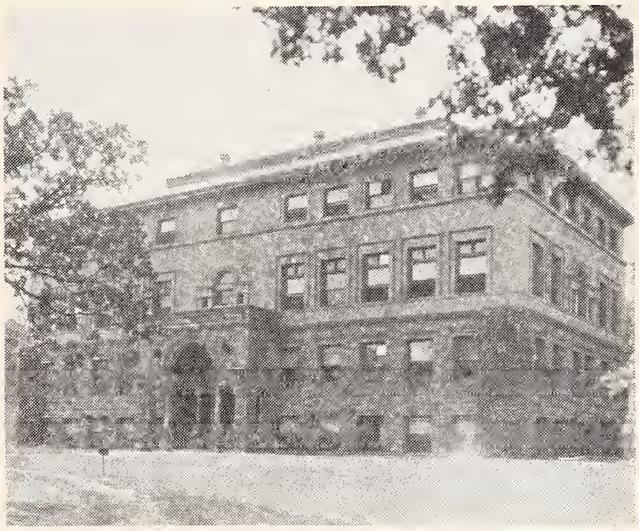
Twenty years later the other medical school in the state, which had been affiliated with Hamline University, merged with the Medical School of the State University. Since that time the presidents of the University, the members of the Board of Regents, with the aid of the deans and the medical faculty, have steered the school on an unwavering course toward the goal of the best in medical education and, through the physicians educated in the school, the best in medical service for the people whom they serve.

The Medical School was conducted until 1893 in a small building near Asbury Hospital in Minneapolis. In these early days, the school lacked laboratories and clinical facilities of its own and all of its twenty-nine faculty members had to earn their livelihood in the private practice of medicine.

The first medical building on the University campus was constructed in 1893 with some funds personally advanced by Dean Millard. This building has been occupied by the College of Pharmacy for the past forty years. Two years later a Medical Science Building, now known as Wesbrook Hall, was constructed to increase the facilities of the Medical School.

In 1912, Millard Hall, the Institute of Anatomy, and the Elliott Memorial Unit of the University Hospital were constructed south of Washington Avenue to form the first units of the new medical campus. Subsequent additions to the facilities of the Medical School include the George Chase Christian Memorial Cancer Hospital and Institute and the Todd Eye, Ear, Nose and Throat Hospital, constructed in 1924; the Eustis Children's Hospital and the University Hospitals Out-Patient Department constructed in 1929; the Psychopathic Hospital addition to the University Hospital in 1937; the Variety Club Heart Hospital in 1951, and the splendid Mayo Memorial addition now under construction.

The entrance requirements of the Medical School were originally a high school diploma or "equivalent preparation as evidenced by a special test." In 1899, the entrance requirements were raised to equal those of the "Arts College." These requirements were further increased in 1902 to one year of collegiate work; in 1908 to two years, and in 1939 to a minimum of three years of college study, with preference given to applicants for admission who have completed the requirements for an academic degree. The length of the medical course was initially three years but was increased to four years in 1895. A fifth or intern year was made a requirement in 1916.



The first medical building erected on the University Campus. Built in 1893, it is still in use. (See text.)

Minnesota—A Strong Medical School

The basic essentials for a strong medical school, beyond reasonably adequate facilities and a sound administrative organization, are a strong and energetic faculty, an able and interested student body, and adequate support. In all of these areas, Minnesota has fared well.

The faculty of the important developmental years of the school included such distinguished medical educators, teachers and scholars as the following:

In Anatomy: Dr. Clarence M. Jackson, Dr. J. B. Johnston, Dr. Thomas G. Lee, Dr. Andrew T. Rasmussen, Dr. Charles Erdmann, Dr. Hal Downey, Dr. Richard E. Scammon.

In Bacteriology: Dr. Winfred P. Larson, Dr. Arthur T. Henrici, Dr. Robert Green, Dr. Halvor Halvorson.

In Pathology: Dean Frank F. Wesbrook, Dr. Harold E. Robertson, Dr. E. T. Bell, Dr. Benjamin J. Clawson.

In Pharmacology: Dr. Arthur D. Hirschfelder, Dr. Edgar D. Brown.

In Physiology: Dean E. P. Lyon, Dr. Richard Olding Beard, Dr. Frederick H. Scott.

In Physiological Chemistry: Dr. Jesse F. McClendon, Dr. George Burr.

In Medicine: Dr. Charles Lyman Green, Dr. George D. Head, Dr. Leonard V. Rowntree, Dr. S. Marx White, Dr. Henry L. Ulrich, Dr. John P. Schneider, Dr. Hilding Berglund, Dr. Hobart A. Reimann, Dr. George E. Fahr, Dr. Moses Barron.
In Obstetrics and Gynecology: Dean Parks Ritchie, Dr. Alexander J. Stone, Dr. Jennings C. Litzenberg, Dr. John L. Rothrock, Dr. Fred Adair.
In Ophthalmology and Otolaryngology: Dr. Frank C. Todd, Dr. William R. Murray, Dr. Frank E. Burch, Dr. Horace Newhart.
In Pediatrics: Dr. Julius P. Sedgwick, Dr. Frederick W. Schlutz, Dr. Walter R. Ramsey, Dr. Frederick C. Rodda, Dr. James T. Christison.
In Surgery: Dean Perry H. Millard, Dr. Charles A. Wheaton, Dr. Frederick A. Dunsmoor, Dr. James E. Moore, Dr. Archibald MacLaren, Dr. Alexander R. Colvin, Dr. J. Frank Corbett, Dr. Arnold G. Schwyzer, Dr. Arthur A. Law, Dr. Harry P. Ritchie, Dr. Arthur C. Strachauer.
In Urology: Dr. Franklin R. Wright
In Orthopedic Surgery: Dr. Arthur J. Gillette, Dr. Emil S. Geist.
In Psychiatry and Neurology: Dr. Arthur S. Hamilton, Dr. Arthur A. Sweeney, Dr. J. Charnley McKinley, Dr. Ernest M. Hammes.
In Radiology: Dr. Robert G. Allison.

These and other devoted teachers and scholars laid the basis for and patiently developed a strong medical school which our present able faculty is carrying forward with distinction.

Medical students at the University of Minnesota have always been an able, earnest and hard working group. In recent years, the number of applicants has far exceeded the number of positions available in the class. The result has been the admission of highly selected groups of students who have made excellent records in the Medical School and in practice of their profession.

Support for the activities of the Medical School has been provided by the Legislature as part of the general University appropriation. This has been reasonably liberal in relation to the resources of the state. In recent years, however, the per student budget of the University of Minnesota Medical School has been below that of our neighboring states of Iowa, Wisconsin and Michigan. Buildings for the Medical School have been constructed in considerable part by private gifts and bequests, and four professorships have been endowed by private funds. These private contributions have been invaluable in the development of the Medical School, but the Medical School will always be dependent for basic support upon state appropriations.

What of the Future?

The Medical School of the University of Minnesota is today an institution in which its alumni, the medical profession and other citizens of the state can justifiably take pride. It is stronger than ever before, not only in medical teaching, but also in medical research—the pioneering scientific work which keeps an institution alive and progressive and brings distinction to its name. With the new buildings that are under construction, facilities will be vastly improved. Urgently needed also are a medical library building and the remodeling and enlargement of Millard Hall and the Anatomy Building. These will doubtless follow in due time. From the State of Minnesota will always come plenty of able medical students. Adequate financial support to meet increasing cost is currently a major problem, but with the continuing interest and support of the medical profession and the citizens of the state, there is every reason to hope that the necessary funds will be provided in the future as they have in the past. The total prospect, then, should be for continuing progress and distinction in medical education, medical research and medical science for the University and for the State of Minnesota.

References

1. Beard, Richard Olding: The History of Medical Education in the State of Minnesota. An Historical Evening December 8, 1908, University of Minnesota. J. Minnesota M.A. & Northwestern Lancet, 29:24-42 (Jan. 15) 1909.
2. Brown, Ester L.: Physicians and Medical Care. pp. 16-17. Russell Sage Foundation, 1937.
3. Flexner, Abraham: Medical Education: A Comparative Study. p. 41. The Macmillan Co., 1925.
4. Norwood, William F.: Medical Education in the United States before the Civil War. pp. 346-352. Philadelphia: University of Pennsylvania Press, 1944.

HEALTH EDUCATION

Health education of the public . . . is often considered the responsibility of organized voluntary and official community agencies. Of course, it is also the physician's personal responsibility. He certainly should educate his patients and their families and do what he can as part of the community program. Health education methods have changed materially in recent years, with much greater emphasis on community organization and on helping the people to help themselves.—Hugh R. Leavell, M.D., *The New England Journal of Medicine,* December 4, 1952.

EIGHTY YEARS OF PUBLIC HEALTH

NETTA WILSON, M.A., M.S. and ALBERT J. CHESLEY, M.D.
Saint Paul, Minnesota

> "I am happy to be able to report the organization of a State Board of Health, by the Legislature of Minnesota, in accordance with the request of this Association (State Medical Association) . . . The Board have already begun their work, encouraged by the cordial co-operation of the entire profession."

THUS did Dr. Charles N. Hewitt, first secretary of the Minnesota State Board of Health, report the creation of the board in 1872. The Minnesota board was the third to be set up in the United States. Massachusetts had created a state board of health in 1869 and California in 1871.

Throughout more than eighty years, the "cordial co-operation" of the medical society and the board of health has continued. The act creating the board provided that the Governor should appoint seven physicians as members. In 1894, a legislative amendment increased the board to nine members who were to be "persons trained in sanitary science." This change opened membership to persons other than physicians, but there have always been more physicians on the board than members of any other profession, and the board of health roster through the years contains many of the most illustrious names in Minnesota medicine.

Throughout its history, the Minnesota State Board of Health has been "remarkably free of political influence." There have been only four state health officers—Dr. Hewitt, 1872-1897; Henry M. Bracken, 1897-1919; Charles E. Smith, 1919-1921 (he died in the latter year); and Albert J. Chesley, 1921 to the present.

The Age of Discovery

The first quarter-century of the board's history constituted an age of discovery. The years from 1872 to 1897 were marked by tremendous advances in public health, despite lack of funds and limited scientific knowledge and equipment. Dr. Hewitt was alert to every new development, but at the same time always cautious in using only proved methods of disease control. From 1872 until 1893, he carried on the public health work of the state from his own small office in Red Wing, which served as administrative headquarters, laboratory, and office for his private practice. His initial salary as part-time state health officer was $200 a year, his entire appropriation $500 a year. He gave generously of his own time and his own funds to the promotion of public health. In 1893 the board's offices were moved to St. Paul, and since that time they have been located in one or both of the Twin Cities.

Chief reason for the establishment of all the early boards of health was the appalling prevalence of acute communicable diseases. In the first year of Dr. Hewitt's administration in Minnesota, there were more than a thousand cases of smallpox in the state, with 250 deaths. Typhoid fever—a disease then characterized as "of miasmatic origin"—was "very rarely absent from the state." Cholera and yellow fever were "epidemic and very fatal." Cerebro-spinal meningitis occurred widely and frequently. In the diphtheria epidemic of 1879-80, hundreds of infants and children died.

One of Dr. Hewitt's major control measures was the promotion of smallpox vaccination. In 1890, he established at Red Wing a station for the production of pure vaccine and continued to operate it for the next seven years. From this station he distributed vaccine at cost to physicians throughout Minnesota and also to the United States Army in the Department of the Dakotas. At a time when the bacterial cause of communicable disease was still regarded as a debatable theory, he made many practical observations in the epidemiology of such diseases.

In 1873, Dr. Hewitt set up a small improvised laboratory in his office at Red Wing. His early laboratory studies were limited to chemical analyses of food, milk, water, and kerosene. He continued to do this work until the state Dairy and Food Commission was created in 1885. In 1890, at his own expense, he spent six weeks of intensive study in Europe. In England and Germany, he investigated the most up-to-date knowledge of diphtheria, and in France he worked with Louis Pasteur on the control of rabies. On his return to Minnesota, he developed "one of the first bacte-

---

Mrs. Wilson is Senior Health Information Consultant and Dr. Chesley is Secretary and Executive Officer of the Minnesota State Department of Health.

riological laboratories concerned with human infections west of the Alleghanies." The Minnesota laboratory was also one of the first to perform the Widal test for typhoid. In 1893, the laboratory was moved to the old Mechanics Arts Building on the campus of the University of Minnesota. Dr. Hewitt did sputum examinations for suspected tuberculosis in 1891, and in 1894 he offered this service on a statewide basis.

Dr. Hewitt's services to the medical profession and the people of Minnesota were not limited to his work for the State Board of Health. He promoted the creation of an examining board for all practitioners of medicine in the state, thus freeing Minnesota from medical quacks long before their activities were suppressed in many other areas. His appointment as professor of public health at the University in 1873 was "probably the first . . . in the country." He held the post for twenty-eight years, during which he inaugurated the physical examination of all students entering the University—a novel procedure for that time. In 1891, at Dr. Hewitt's request, the federal Marine Hospital Service, forerunner of the U. S. Public Health Service, sent to the Minnesota state board of health the first notification of a case of infectious disease in a traveler bound for Minnesota. This service has continued ever since without interruption, and a similar arrangement has been made with the government of Canada.

From its earliest days, members of the Minnesota State Board of Health understood the importance of environmental sanitation. In 1875, Dr. Hewitt began the examination of samples of water, milk, and foods. In 1876, the board was hiring the services of a sanitary engineer "as needed" in order to help correct some of the extremely bad sanitation practices of the time. Dr. Hewitt described the water supply and sewage disposal systems in public institutions as "a disgrace to the state" and never ceased to urge upon state legislators and the public the need for improvement. In 1885, the Legislature empowered the state board of health to prevent the pollution of domestic water supplies.

Also in 1885, the State Board of Health was charged with the control of contagious diseases in animals. In 1897, the board appointed as head of its veterinary department Dr. H. M. Reynolds, who was a doctor of medicine as well as a veterinarian. He became the first secretary of the Live Stock Sanitary Board when it was established in 1903 and took over animal disease work in the state.

Such was Dr. Hewitt's prestige that he was able to attract to Minnesota some of the leading young pioneers in public health work in the nation. One of these was Dr. Frank Fairchild Wesbrook, who "was to add greatly to public health science in Minnesota." First employed as a bacteriologist in 1895, he remained in charge of the board of health laboratory until he was made dean of the university medical school in 1910. He served also as professor of bacteriology and pathology at the university and as a member of the state board of health. He was succeeded as laboratory director by another Minnesota pioneer, Dr. Orianna McDaniel.

Because of the prevalence of rabies in Minnesota, Dr. Hewitt on his return from Europe in 1890 had recommended the establishment of a center for diagnosing the disease in human beings and for giving the Pasteur treatment. It was not until 1907, however, that the board was finally able to obtain funds for the establishment of a Pasteur Institute, and Dr. McDaniel was placed in charge of it. The institute continued to operate until 1921, by which time antirabic vaccine was readily available for use by private physicians.

The Age of Development

The second quarter-century of public health in Minnesota saw the development and extension of the pioneer work begun by Dr. Hewitt and his associates. Those years also included the first world war and the attendant disruption of civilian public health services due to the absence of more than one-third of Minnesota's physicians and nurses on military service.

The war, however, was not without certain favorable effects on public health. For one thing, it brought to light the previously unsuspected prevalence of venereal disease. The Governor of Minnesota appointed a Social Hygiene Commission to assist in control measures. Their program was promptly co-ordinated with that of the state board of health, which in 1918 appointed Dr. H. G. Irvine to direct a comprehensive control program financed by emergency state and federal funds. This was the first occasion when federal funds were given to the states for a specific public health program. The wisdom of the innovation was doubted by some members of the medical profession, but whatever misgivings they may have had were resolved by Dr. Irvine's handling of the program. He worked in the closest possible co-operation with the medical association, and put into practice his belief that as soon as possible the state board of health should withdraw from the treatment field and leave it to private practitioners, while continuing to give advice and help to all physicians who might need it. For thirty-five years this program has been so effectively carried out that Minnesota has had for a long time one of the lowest venereal disease rates in the nation.

Another notable advance during the age of development was in tuberculosis control. In its pioneer days, Minnesota somehow gained a reputation as "an asylum for consumptives." The result was exceptionally high death rates from tuberculosis. The highest death rate, 119.7 per 100,000 population, was recorded in 1911. Contributing to this high death rate was the great prevalence and fatality of tuberculosis among the state's Indians. At Dr. Bracken's request, the U. S. Public Health Service in 1912 conducted a thorough survey of communicable diseases among Indians. The findings of this survey were very valuable in obtaining support for future public health programs for the Indians.

In 1907, a ninety-bed state tuberculosis sanatorium was opened at Walker, especially for the care of early cases. Dr. Walter J. Marcley was its first superintendent. A legislative act of 1909 provided for the creation of county sanatoria. During the period since then, fifteen have been established and have rendered a valuable service in isolating thousands of cases and restoring many of them to health.

A State Tuberculosis Association was organized in 1906, and from then until now has promoted state-wide public education about tuberculosis and has worked with the state board of health in many other ways for control of the disease.

A highly significant factor in the reduction of tuberculosis and other health problems was the development of public health nursing. Since the early days of Dr. Hewitt's administration, the need for such nurses had been stressed by state and local health officers. A few nurses were employed in various sections of the state, but there was no provision for supervising or co-ordinating their work. In 1916, the State Board of Health authorized the employment of a state superintendent of nurses, but no funds were available to carry out the provision. In July, 1918, Miss Frances Brink was employed "to correlate the work of community nursing." This turned out to be a most timely move, for the influenza epidemic struck the state less than three months later, coinciding with a high incidence of poliomyelitis and several disastrous forest fires. This desperate situation inspired many communities to employ public health nurses. For a time, there were approximately seventy-five in the field under Miss Brink's supervision. No money was available to continue the state program after the epidemic subsided, but the need had now been recognized by the medical profession and the public. Despite many setbacks, public health nursing has progressed steadily to the position it now holds as an indispensable aid to practicing physicians.

Although epidemiology had been a major concern of all health departments since their beginning, it is believed that the term "epidemiologist" was first used in Minnesota in 1909, when the title was given officially to Dr. Hibbert W. Hill. A division of epidemiology was established by the State Board of Health on January 1, 1910.

In 1910, there were 688 deaths from typhoid fever in Minnesota. Chlorination of water supplies was started in that same year, after which typhoid showed a progressive decrease. Identification and control of chronic carriers of typhoid germs through epidemiological and laboratory services has been consistently followed since January 1, 1913.

In 1915, 300 stations for the distribution of diphtheria antitoxin were established all over the state. This move, followed in 1926 by the first diphtheria immunizations, contributed much to the control of the disease. Minnesota was one of the first states where two successive negative nose and throat cultures were required before a diphtheria patient could be released from isolation.

From 1917 until 1921, the State Board of Health was responsible for the follow-up care of persons crippled by poliomyelitis. No treatments were given other than aiding in the adjustment of braces and other appliances. "Polio teams" from the health department worked with local physicians and public health nurses to help prevent or lessen disabilities suffered by children who had polio paralysis. The board of health purchased one of the first Drinker respirators and placed it in the University hospital for treatment of polio cases.

It was during this period of development that the board of health began to decentralize its services. One most important move in this direction was the establishment in 1905 of a branch laboratory in Duluth, with Dr. E. L. Tuohy as its director. This laboratory is still in operation.

In 1910, Minnesota became eligible on completeness of death reports to be included in the United States registration area, and in 1915 it constituted one of the ten original states comprising the U. S. registration area for births.

The Age of Consolidation

So diversified has the public health program become during recent years—the age of consolidation—that a brief record such as this can do no more than set down a few of the major landmarks of progress since the end of World War I.

Infant mortality rates decreased from 66.1 per 1,000 live births in 1920 to 2.5 in 1950. Maternal deaths decreased from 6.2 per 1,000 live births in 1920 to 0.6 in 1950. One recent development is the increasing attention being given to the prevention of accidents among children and young people. Accidents now rank first as a cause of death in all age groups from one to thirty-five years.

Communicable diseases, which caused a majority of the deaths in 1920, caused only about 5 per cent of all deaths in Minnesota in 1950. More than 75 per cent of the deaths occurring in that year were charged against chronic diseases, chiefly heart disease and cancer. The tuberculosis death rate in 1952 reached the all-time low of 6.6 per 100,000 population.

Before the first World War, Minnesota had a high venereal disease rate. By 1950, this rate was one of the lowest in the nation. Not one baby infected with syphilis was born in the state that year.

In 1918, the State Board of Health employed a physician to carry on work in child hygiene, but the program had to be suspended because of lack of funds. In 1921, the Sheppard-Towner Act made federal funds available to the states for maternal and child health, and Minnesota re-established its program. During World War II, the Minnesota Department of Health handled more than 30,000 cases under the Emergency Maternity and Infant Care program directed by Dr. V. O. Wilson with the "cordial co-operation of the entire profession" and personal advice of Dr. Roger L. J. Kennedy.

Another recent federal-state concern was the Hospital Survey and Construction program, under which the state board of health since 1946 has administered funds to build thirty-eight new hospitals and aid a number of similar projects. This work is carried on by Dr. Robert N. Barr, Deputy Executive Officer, and Dr. Helen Knudsen, Chief of Hospital Services Section.

Chlorination of municipal water supplies has been standard procedure since 1910. In 1945, the Water Pollution Control Commission was established, making it possible for public health representatives of all states located in a particular drainage area to work together for the common benefit of their populations. Since an annual survey and rating system was started in 1946, there has been a steady improvement in the safety of the state's drinking water. A law providing for the virtual statewide pasteurization of milk became effective in 1950. The environmental sanitation program has been extended to include hotels, restaurants, and (since 1951) tourist and children's camps.

Dental health, occupational health, mental health, and health education have all been added to the health department's duties during the age of consolidation.

Although every state health officer has recognized the need for full-time local health services, there have never been sufficient funds or personnel available to establish them. As a temporary measure to decentralize its services, the health department now operates eight district offices, which since 1948 have included all counties in the state. Minnesota still has more than 1,500 local boards of health with part-time health officers, many of them receiving no pay for their public health work.

From its beginnings in 1872, with one part-time executive secretary, the Minnesota State Board of Health has grown until today it employs approximately 300 people. It carries on a program that involves in some way every resident of the state and provides services that aid the work of every practicing physician.

HISTORY OF THE MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

1851-1952

F. H. MAGNEY, M.D.

Duluth, Minnesota

THE FIRST record of an authorized body being formed to examine physicians in Minnesota is found in the territorial laws of Minnesota for 1851, where Section 5, provided:

> "The medical societies established as aforesaid are hereby respectively empowered to examine all students who may present themselves for the purpose, and to grant them diplomas under the hand of the president and the seal of the society; which diploma shall constitute them members of said society; and it is hereby made the duty of the censors of each medical society carefully and impartially to examine all medical students who shall present themselves for that purpose and report their opinions in writing to the president of the society."

Section 6 of the same law provided·

> "No person shall be permitted to be examined as a candidate for a diploma and membership of any of said societies, unless he shall have arrived at the age of twenty-one years, has at least a good English education, and has studied medicine at least three years with some respectable practitioner and can produce satisfactory evidence of good moral character."

It is interesting to note that the examination fee was $10.00 and an additional amount not exceeding $3.00 could be assessed "for the purpose of procuring a medical library, anatomical cabinet, chemical apparatus, or for the encouragement of useful discoveries in the science of medicine."

The possession of a diploma was not necessary, for at that time it was not a criminal offense to practice without it. It was not until eighteen years later that definite qualifications were required by law when on March 9, 1869, Section 1 of that law provided:

> "That it shall be unlawful for any person within the limits of said state who has not attended at least two full courses of instruction and graduated from some school of medicine either in the United States or of some foreign country, or who cannot produce a certificate of qualification from some state, district, or county medical society, and is not a person of good moral character to practice medicine in any of its departments or perform any surgical operation for reward or compensation or attempt to prescribe medicine or medicines or perform any surgical operation for reward or compensation within the said State of Minnesota."

A penalty of a fine of not less than $50.00 nor more than $100.00 was established for the first offense and for a subsequent offense the foregoing fine and a jail sentence of thirty days. Section 3 of the same law provided that a physician file his diploma in the office of the clerk of the district court in the county in which he resides or keeps his office. One studying with a preceptor was given three years from the commencement of his course of study to comply with the provisions of the law of 1869. This law was repealed on February 24, 1870 by Chapter 47 of the General Laws of Minnesota for that year.

The first State Board of Medical Examiners was created on March 5, 1883 by Chapter 125, the General Laws of Minnesota for 1883. This law provided:

> "The faculty of the medical department of the University of Minnesota shall organize as a board of examiners as herein provided, within three (3) months after the passage of this Act; they shall procure a seal, and shall receive through their secretary applications for certificates and examinations."

This law also provided:

> "That any person practicing medicine in any of its departments shall present this diploma to the examining board for verification of its genuineness. If the diploma is found genuine and the person named therein be the person claiming and presenting the same, the board shall issue its certificate to that effect. If not a graduate, the person practicing medicine in this state shall present himself before said board and submit himself to such examination as said board shall require."

If the diploma was found to be genuine, the Board was permitted to charge a fee of $1.00, but if found to be fraudulent the board was permitted to charge and collect $20.00 from the applicant presenting such diploma. Candidates for examination were required to pay a fee of $5.00. A person was regarded as practicing within the meaning of the Act: "who shall profess publicly to be a physician and to prescribe for the sick or

---

Dr. Magney is President of the Minnesota State Board of Medical Examiners.

who shall append to his name the letters M.D." One who violated the Act was subject to a fine of not less than fifty dollars or more than five hundred dollars or to imprisonment for not less than thirty days or more than one year.

The next change in the laws was on February 28, 1887, at which time Chapter 9 of the General Laws of Minnesota for 1887 increased the State Board of Examiners to nine members and provided that they were to be appointed by the Governor. The Legislature for the first time provided the subjects for which the applicant must be examined. The subjects were: Anatomy, physiology, chemistry, histology, materia medica, therapeutics, preventive medicine, practice of medicine, surgery, obstetrics, diseases of women and children, diseases of the nervous system, diseases of the eye and ear, and medical jurisprudence. The applicant must have attended three courses of six months each. Seven members of the Board had to consent to the granting of a license. The penalty for practicing without a license was stipulated at not less than $50.00 nor more than $100.00, and by imprisonment in the county jail for not less than ten days nor more than ninety days.

In 1895, the Legislature increased the requirements to four full courses of lectures at a school recognized by the Board. This became effective on or after January 1, 1899.

Reciprocity was first recognized by the Minnesota Legislature in 1905. Section 2297 of the General Laws provided that the Examining Board may grant a license to physicians licensed to practice by a similar board in another state.

In 1911, the Legislature authorized the Medical Board to issue itinerant licenses to physicians in addition to their regular license on the payment of a fee of $300.00. However, this authorization being discretionary, the Board does not issue itinerant licenses because the granting of such a license is not in the best interest of the public.

Fee-splitting was first prohibited by law in Minnesota by Chapter 365 of the Session Laws of 1917, the law providing: "It shall be unlawful for any physician or surgeon to divide fees with or to promise a part of his fee to or pay a commission to any other physician or surgeon or person who calls him in consultation or sends patients to him for treatment or operation."

On April 15, 1919, the Legislature provided that the State Board of Medical Examiners may, with or without examination, grant a license to any physician who has satisfactorily passed the examination given by the National Board of Medical Examiners.

In 1927, the Legislature reduced the Board membership to seven and provided that the Council of the Minnesota State Medical Association might make recommendations of three physicians for each position on the new Board. It was at this session of the Legislature that the basic science law was passed. Each physician was required to register during the month of January in each year and to pay to the Board a fee of $5.00 a year for the first two years, and two dollars per year thereafter. The law authorized the State Board of Medical Examiners to expend this money in the enforcement of the Medical practice act and the basic science law. This then marked the beginning of the enforcement of the medical act as we find it today. Another requirement is that each physician must qualify for a basic science certificate as a prerequisite to securing a medical license.

The Board has the duty of examining and registering midwives. They were first registered in 1891, at which time there were 256. The present registration is twenty-one.

Masseurs have been examined and licensed by the Board since 1929, at which time licensing by their own board was discontinued. It had only been in existence since 1927. At that time there were 268 masseurs. At present there are ninety-five.

The 1951 Minnesota Legislature passed a law authorizing the registration of physical therapists, such registration being under the supervision of the State Board of Medical Examiners. At the end of 1952, 107 physical therapists had been screened and registered.

Medical licenses granted during the years 1883 through 1927, prior to the passage of the Minnesota Basic Science law, and those granted after this law was passed are as follows:

	AFFIDAVITS	EXAMINATION	RECIPROCITY	NATIONAL BOARD	TOTAL
1883 through 1927	1,707	3,972	1,257	47	6,983
1928 through 1952		4,965	863	546	6,374
TOTALS	1,707	8,937	2,120	593	13,357

From 1927 through 1952, 2,867 graduates from the University of Minnesota have been licensed.

Since 1883, 614 women physicians have been licensed; twenty-five during the year 1952.

The largest number of physicians licensed in any one year was 420. This was during 1947.

In May 1949, the Board revised its rules and regulations with reference to foreign physicians and waived the previous requirement of full citizenship and decided to admit physicians who are graduates of foreign schools on an individual basis, providing their credentials can be verified and approved. Since that time, eighty-one applicants have appeared before the Board. Of this number, thirty have passed the examination and have been licensed; nine have been authorized to take the examination; twenty-six have been authorized to take a year's graduate training at one of our approved hospitals in Minnesota; one was permitted to continue his postgraduate training at the University of Minnesota; three are pending regarding verification of credentials; one was denied; eight have not been heard from; and three have withdrawn their application. Twenty-two of the applicants are women physicians.

It was hoped that the licensing of these foreign physicians would provide the wanted medical care for less populated areas and small towns. This has not materialized. Of the thirty licensed, only five have located in small towns. Six have joined the medical staffs of Minnesota State hospitals, four are located in Saint Paul, nine in Minneapolis, and six have left the state.

The total number of physicians registered for 1952 is 6,629. Of this number, 4,031 live in Minnesota and 2,598 out of the state.

The question of the shortage of physicians, as usual, is a much discussed question. The public press, particularly, continues to stress the need for training more physicians. However, the mere training of an additional number of physicians will not insure certain localities the services of a resident physician, as economic conditions are also involved.

On April 1, 1950, the United States census showed the population of Minnesota to be 2,982,483; the state ranked eighteenth in the population of the nation and thirteenth in land area. The 1950 urban population in and around Minneapolis, Saint Paul and Duluth, numbered 1,624,914 (54.5 per cent of the state's population) and the rural population comprised 1,357,569 (45.5 per cent).

Minnesota Census (1950)

Towns	*Population*	*No. Physicians (Dec. 31, 1952)*
Duluth	104,511	165
Minneapolis	521,718	1,193
Rochester	29,885	740
Saint Paul	311,349	531
Other towns	2,015,020*	1,402
TOTALS	2,982,483	4,031

*Of this figure, 687,336 are urban, located near Minneapolis, Saint Paul or Duluth.

Ratio of Physicians to Population

1933	1 to 868 persons
1948	1 to 721 persons
1949	1 to 710 persons
1950	1 to 718 persons
1951	1 to 779 persons
1952	1 to 759 persons
1953	1 to 739 persons

Reciprocity has been established with medical boards of thirty states, and an additional twelve on a discretionary basis, making a total of forty-two. National Board diplomates are accepted in Minnesota without examination.

Since the beginning of the legal enforcement program in 1928, which was made possible with funds secured from annual registration, there have been 356 court cases. Out of this number, 319 persons were convicted. Of the thirty-seven non-convictions, fifteen were declared not guilty, fifteen cases were dismissed, two were not indicted by grand jury, three forfeited bail and two defendants died before the case was heard. The majority of these were unlicensed persons, but there were some physicians and surgeons, pharmacists, chiropractors, osteopaths, beauticians and barbers, masseurs, midwives, dentists, optometrists, registered nurses, and embalmers.

There have been 466 physicians investigated; 438 investigations have been made of persons other than physicians and surgeons. These investigations, together with the court cases, have involved abortions, infractions of the medical and basic science law, advertising laws, civil suits, sale of liquor and narcotic prescriptions, failure to reports births and deaths, excessive use of liquor, use of narcotics, fraudulent prescriptions, immorality, and other miscellaneous complaints. Some of the complaints with reference to physicians have come from dissatisfied patients, and it has been found that the physician had not been at fault.

Thirty-four medical licenses have been revoked

(Continued on Page 363)

MEDICAL JOURNALISM IN MINNESOTA

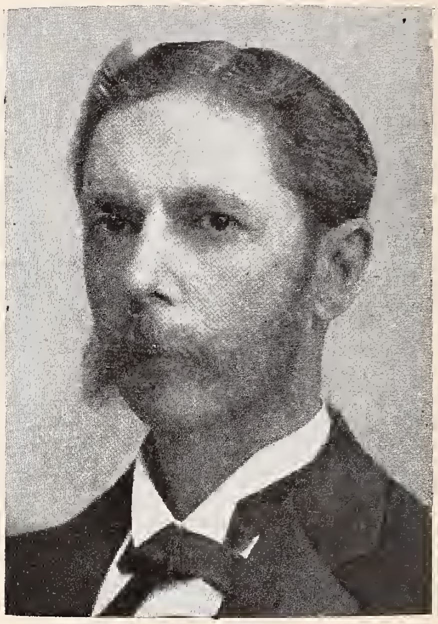
CARL B. DRAKE, M.D.
Saint Paul, Minnesota

THE HISTORY of medical journalism in Minnesota is the story of some fifteen different journals which began publication before 1900. One ceased publication after one issue. Others lasted a few months or years. All went out of existence except the *Northwestern Lancet* which was founded in 1881 by Dr. Jay Owens of Saint Paul, suddenly changed its name to the *Journal of the Minnesota State Medical Association and the Northwestern Lancet* with the appearance of the issue of November 15, 1905, and became the *Journal-Lancet* in 1912. In 1899 the *Saint Paul Medical Journal* made its appearance and continued publication until the Minnesota State Medical Association began its own publication, MINNESOTA MEDICINE, in 1918.

The numerous attempts of the various medical journals to maintain publication failed because of financial reasons—lack of sufficient advertisements and subscriptions—and perhaps a dearth of scientific material.

The first medical journal to be published in the state was the *Minnesota Homeopath* which appeared in Saint Paul in 1859. Dr. George Hadfield, a homeopath, who was the publisher, seemed to be more interested in reaching the public than in serving the profession. Probably only a few numbers appeared.

The first medical journal worthy of the name was the *Northwestern Medical and Surgical Journal* established by Dr. Alexander J. Stone in 1870. Dr. Stone was a native of Maine, had attended Harvard Medical School in 1865-66, as well as the Medical School of Maine and Berkshire Medical College at Pittsfield, Massachusetts. After a trip abroad where he visited Paris, Edinburgh, and London, he practiced with Dr. D. H. Storer in Boston for a short time. In 1869 he came west and settled in Stillwater, Minnesota, which had taken its name from Stillwater, Maine, and had been largely settled by Maine people. His idea of publishing a medical journal having received new impetus at the February, 1870, meeting of the Minnesota State Medical Society *(sic)*, the first issue of the *Northwestern Medical and Surgical Journal* made its appearance June 1, 1870. Dr. Stone was the editor and David Ramaley of Saint Paul, the publisher. In October or November of that year Dr. Stone moved to Saint Paul, which must have greatly facilitated his editorial work. The *Journal* appeared monthly and the subscription price was $3.00 a year or 35 cents a copy.



DR. ALEXANDER J. STONE

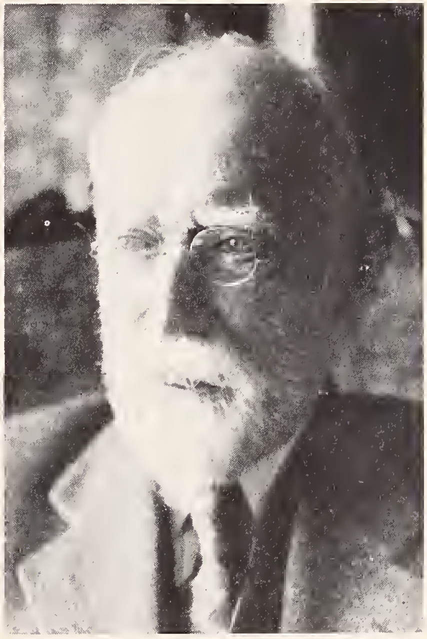
Dr. Stone was not only the first real medical editor in Minnesota; he took part in the first attempt at medical education in the state when in 1870 the Saint Paul School for Medical Education was established with Dr. Stone as secretary. As time went on, Dr. Stone became one of the leading surgeons in the state. His specialty was gynecology and he acquired an extensive and profitable practice. In 1882, when the American Medical Association met in Saint Paul, he was chairman of arrangements, called the session to order and was elected second vice president. In 1887, the University of Iowa conferred upon him the degree of LL.D. In 1872, at the age of twenty-seven he was elected vice president of the Association of American Medical Editors and later president of the association. It was not generally known that Dr. Stone had congenital dislocation of the hips which he successfully concealed by habitually wearing a Prince

Albert. He also developed Dupuytren's contracture of the palms of both hands which, however, did not prevent his operating.

Two years after establishing the *Northwestern Medical and Surgical Journal,* Dr. Stone sold it to Dr. H. C. Hand of Saint Paul who became editor with Dr. H. H. Kimball of Minneapolis as business manager. Somehow, the list of subscribers was lost in the transfer and this must have been a setback. Publication ceased in June, 1874, after four years of publication.

Another early medical publication was called the *Minnesota Medical Mirror* which was published from December, 1881, to March, 1885, in Cambridge, Minnesota, by Dr. N. M. Cook. *The Minnesota Medical Monthly,* a homeopathic organ edited by Dr. Wm. E. Leonard, was published in Minneapolis from May, 1886, to October, 1888. A Dr. Edward Fishblatt published a short-lived journal called the *Minnesota Medical and Surgical Journal* in Minneapolis from August, 1886, to March, 1887. On the title page appeared "Formerly the New York Medical and Surgical Journal." In January, 1889, one issue of the *Minnesota Medical Journal* appeared in Minneapolis under his editorship. In the library of the Ramsey County Medical Society are a few copies of the *Northwestern Medical Journal,* a monthly edited by Dr. E. N. Fishblatt of Mineneapolis, with Dr. W. Elmer Hubbard of Salt Lake City listed as Assistant Editor. It was published in Minneapolis and contained contributions from physicians all over the country. Copies dated November and December, 1891, and January, 1892, volumes 19 and 20, respectively, strongly suggest that this journal was nineteen years old in 1892. Then there was the *Medical Dial* published in Minneapolis by Dr. J. W. MacDonald from December, 1898, to December, 1903, when it was absorbed by the *Northwestern Lancet.* There was also the *Medical Argus,* published in Minneapolis as a homeopathic organ from July, 1890, to January, 1898, under the editorship of Dr. Frank Fisk Cassidy.

The *Northwestern Lancet,* the forerunner of the *Journal-Lancet,* began publication on October 1, 1881, as a semi-monthly. Dr. Jay Owens of Saint Paul was the owner and editor. Dr. Charles B. Witherle of Saint Paul became its editor in November, 1884. In September, 1886, any rights which Dr. Owens might have had in the publication were bought by Dr. Alexander J. Stone for the sum of one dollar. On the title page in 1886 appeared the name of Dr. Stone as proprietor and Dr. Witherle as editor. In 1887 Dr. Stone was listed as editor and Dr. William Davis of Saint Paul as assistant editor. Dr. Davis, in fact, did most of the actual editing of the journal from the time Dr. Stone acquired ownership and the names of both Dr. Stone and Dr. Davis appeared as co-editors from 1891 until 1900. Dr. William Davis was a native of Boston and a graduate of Andover and Harvard (1879). On his graduation from Andover Academy he shipped as a passenger on board a sailing vessel bound for India with a cargo of ice. The voyage was recommended by an oculist as a cure for astigmatism. Strange to relate, the ice reached India after a three months' voyage. Whether the astigmatism was corrected is not known. Dr. Davis came to Saint Paul in 1882 on account of his wife's health. He became one of the leading general practitioners in Saint Paul before he retired in 1939. He passed away in 1947 at the age of ninety-three.


Dr. William Davis

In 1887, William L. Klein, a graduate of Phillips Academy and Cornell College, became business manager of the *Northwestern Lancet.* Besides being business manager he was well qualified to assist in editorial work as proven by the little volume entitled "Why We Punctuate," which he wrote and published in 1897 and which is still authoritative. After graduating from Cornell, he became head of a Normal School at Avon, New York, and later was principal of a school at Woodstock, Illinois. Following that he founded a book publishing company in Chicago.

Dr. William A. Jones

Mr. Klein and Dr. Davis worked together as a most efficient team in the publishing and editing of the *Northwestern Lancet* from 1887 until 1899 when Dr. Davis' place was taken by Dr. Howard Lankester of Saint Paul, who in turn retired in 1901. In the December 15, 1900, issue of the *Lancet,* Dr. Stone editorially announced the severance of his connections with the journal and, in 1901, Dr. William A. Jones of Minneapolis began his editorship, which in association with Mr. Klein as publisher was to last for thirty years. The *Lancet* offices were moved to Minneapolis and Mr. Klein purchased the *Northwestern Lancet* in 1905.

In 1905 the *Northwestern Lancet* changed its name to the *Journal of the Minnesota State Medical Association and the Northwestern Lancet.* The same year it became the official organ also of the South Dakota State Medical Association and remained so until the South Dakota Association established its own state journal in 1948—the *South Dakota Journal of Medicine and Pharmacy.*

In 1912, the journal adopted the shorter title of *Journal-Lancet.* It became the official organ of the North Dakota State Medical Association in 1913 as well as for the Minnesota and South Dakota Associations. In 1918 the Minnesota State Medical Association began publication of its own journal—MINNESOTA MEDICINE—and the *Journal-Lancet* ceased to be the official organ of the Minnesota Association. In 1935, the *Journal-Lancet* became the official organ for the Montana State Medical Association, but in 1948 the Montana Association adopted the *Rocky Mountain Medical Journal* as its official organ.

Dr. William A. Jones of Minneapolis was an outstanding figure in medical circles for many years as a specialist in nervous and mental diseases and as a medical editor. A native of Minnesota, he attended grade schools in St. Peter and received his medical training at the University of the City of New York, graduating in 1881. He immediately became assistant physician at the State Hospital for the Insane at St. Peter, Minnesota. In 1883, he began the general practice of medicine in Minneapolis. After studying in Berlin and Vienna in 1886, he returned to Minneapolis and specialized in nervous and mental diseases. Besides practicing his specialty, he served on the State Board of Health for twelve years, was a clinical professor on the University of Minnesota medical school faculty and edited for thirty years the *Journal-Lancet* and its predecessors which appeared semi-monthly. He also took a very active part in medical organization. His choice of a vacation consisted in a trip to New York where he spent most of his days in his hotel room reading and his evenings at the theater. Fishing and hunting and out-door sports did not appeal to him. When twitted about his bald head, he was once heard to remark that he had early been given the choice of hair or brains and had chosen brains.

In 1929, both Mr. Klein and Dr. Jones gradually turned over the active running of the *Journal-Lancet* to others and since 1931, the year they both died, the editing of the journal has been conducted by an editorial board, with Dr. J. A. Myers of Minneapolis as chairman and Dr. Thomas Ziskin, secretary.

On the basis of Dr. Stone's ownership of the *Northwestern Medical and Surgical Journal* in 1870 and the *Northwestern Lancet* in 1886, the *Journal-Lancet* celebrated its sixtieth birthday in 1931 and its eightieth birthday in 1951, rather ignoring the period of suspended animation which occurred between 1874 and 1880.

The Proceedings of the Minnesota State Medical Association were published in pamphlet form from 1869 until 1905 when the *Northwestern*

Lancet changed its name to the *Journal of the Minnesota State Medical Association and the Northwestern Lancet.* From then on, this journal and its successor, the *Journal-Lancet,* published the proceedings until MINNESOTA MEDICINE took over in 1918.

DR. BURNSIDE FOSTER

The Ramsey County Medical Society began the publishing of the *Saint Paul Medical Journal* in 1899. Dr. Burnside Foster, a St. Paul dermatologist, was editor-in-chief and Dr. H. Longstreet Taylor, the managing editor. On the Editing and Publishing Committee at the start were Drs. Charles A. Wheaton, Angus MacDonald, C. Eugene Riggs, J. W. Chamberlain and Arthur J. Gillette. In 1901, the name of Dr. William Davis appeared on the committee. It was announced that the journal would be published with the collaboration of outstanding physicians of Philadelphia, Boston, Baltimore, New York, Vienna, Milwaukee, Cincinnati, St. Peter, Rochester and Minneapolis.

Dr. Burnside Foster was a native of Worcester, Massachusetts. He attended Yale College and obtained his medical degree from Harvard Medical School in 1886. After a brief tour abroad, he settled in Minneapolis but moved to St. Paul after two or three years. He wrote well and besides editing the *Saint Paul Medical Journal,* he wrote on medicine for lay journals. He was credited with having originated the idea leading to the establishment of the Life Extension Institute by a number of life insurance companies.

In 1916, Dr. Foster became editor emeritus of the journal and Dr. Ernest T. F. Richards assumed the editorship, with Charles E. Smith, Jr., as secretary. An editorial board, one of whose functions was to abstract current literature for the journal, consisted of Wallace Cole, George Earl, Ernest M. Hammes, Carl B. Drake, E. Mendelssohn Jones and Harry B. Zimmerman. The Editing and Publishing Committee was made up of C. Eugene Riggs, Robert O. Earl, H. Longstreet Taylor, Warren A. Dennis and Frank J. Savage.

By the year 1916, the idea of the Minnesota State Medical Association owning its own journal had gained considerable support. In the House of Delegates that year a committee was appointed to investigate the matter. The committee appointed consisted of Dr. E. W. Buckley, chairman, George E. Senkler, R. J. Hill, J. Warren Little and Charles Scofield. The committee was directed to make its investigation and submit its findings to the county societies six months in advance of the next annual meeting of the State Association. At the meeting of the House of Delegates in 1917, Dr. Scofield presented the majority report of the committee signed by all members of the committee except Dr. Buckley, and simply stated that it was deemed inadvisable for the Association to publish its own journal. Dr. Buckley, chairman of the committee, then presented the minority report. He told of having written all the editors of the then existing twenty-eight state journals which represented thirty-three state medical associations; that the twenty he had heard from were doing well and favored the idea of a state association owning its own journal. Thus advertising would be limited to items approved by the Council of Pharmacy and Chemistry of the American Medical Association. He listed some twenty unaccepted articles advertised in the official organ of the Minnesota State Medical Association and made an impassioned plea for joining the other thirty-three states which had co-operated with the AMA in the matter of advertisements. Dr. Buckley was a fine speaker and loved to match wits with others in forensic debate. His presentation of his viewpoint took the House of Delegates by storm and at the conclusion of his speech, his motion to establish a State Association-owned journal was carried. Dr. Robert Earl then presented the offer of the Editing and Publishing Committee of the *Saint Paul Medical Journal* to give the journal to the State Medical Association. Dr. Buckley moved that the matter be referred to a committee of five to make a report to the House of Delegates before its final adjournment. This motion was carried, and a committee consisting of Drs. J. W. Cochrane, Robert Earl, J. M. Armstrong, E. R. Hare and M. W. Smith was appointed. At a final meeting of the House of Delegates, this committee recommended the establishment of a new Association-owned journal with an Editing and Publishing Committee of five members, two to be appointed from the Hennepin County Medical Society, two from the Ramsey County Society and one from the state at large. Each Councilor District was to have one representative as an Associate Editor. The Editing and Publishing Committee was to have complete charge of the journal, select the editor, determine his compensation, et cetera., subject to the approval of the Council of the State Association.

The mere relation of the events leading up to the establishment of MINNESOTA MEDICINE fails to depict the travail which attended its birth. At the meeting of the House of Delegates in 1918, an attempt was made to rescind the action of the House the previous year which established MINNESOTA MEDICINE, on the grounds that Dr. Buckley's committee had ignored the instruction of the House in not submitting their findings to the county societies. Dr. Buckley took the floor, assumed the responsibility for failure in this point, signified his willingness to submit to the opinion of the House as to the importance of the omission, but added, "I have nothing in this world but my good name and have worked for it for thirty years, and when a man attacks my good name and charges me with being a political trickster I will follow him to the bowels of hell." MINNESOTA MEDICINE continued publication.

The first Editing and Publishing Committee of MINNESOTA MEDICINE consisted of Drs. Louis B. Wilson, Rochester; H. Longstreet Taylor and E. W. Buckley, Saint Paul, and John E. Hynes and Robert E. Farr of Minneapolis. The offer of the *Saint Paul Medical Journal* of its good will, advertising contracts and subscriptions was declined. Dr. E. T. F. Richards was selected as editor, with Ernest M. Hammes and Paul D. Berresford as Assistant Editors. Thus Minnesota became the twenty-ninth state to establish its own publication. Its purpose, as stated in the first editorial of the first issue which appeared in January, 1918, was to federate and bring into one compact organization the entire medical profession of the state of Minnesota; to extend medical knowledge and advance medical science; to elevate the standards of medical education. Lack of wholehearted support on the part of the members of the State Association has resulted in only partial attainment of the professed purpose of the journal.

Mr. J. R. Bruce of the Bruce Publishing Company, Saint Paul, was chosen as the publisher and business manager of the newly established journal. MINNESOTA MEDICINE, which was his first medical publication, was followed by numerous other medical publications in the ensuing years. Miss Irene Goette, librarian of the Ramsey County Medical Society, acted as secretary of the journal for several years until the work entailed in preparing the journal for publication was taken over by Miss Olive Seibert of the Bruce Publishing Company, who has given most efficient and co-operative editorial assistance through the years. Others in the employ of the Bruce Publishing Company sharing in the production of the journal a similar number of years are Mrs. Eva Appleby who, as secretary to the business manager, has handled advertising records and assisted in the journal make-up, and Mrs. Thomas H. Hall, who handles financial matters.

In March, 1919, shortly after my return from service in the Army, I received a letter from Dr. H. L. Taylor, president of the Editing and Publishing Committee, explaining that Dr. Richards had turned in his resignation as editor of MINNESOTA MEDICINE and requesting that I get out the April and succeeding issues of the journal until Dr. Bronson Crothers returned from Army service. I said I would; Dr. Crothers settled in Boston as a specialist in Nervous and Mental Diseases of Children and has not yet returned.

By April, 1953, exactly thirty-four years have elapsed since I got out the April, 1919, issue of MINNESOTA MEDICINE. During this period I have attended the meetings of State Medical Association secretaries and editors held almost yearly at AMA headquarters in Chicago and have received much inspiration from association with

(Continued on Page 383)

A CENTURY OF MEDICINE

1853-1953

S. MARX WHITE, M.D.
Minneapolis, Minnesota

MEDICINE as a discipline can be said truly to have begun with Hippocrates, but from the time of his death in about 355 B.C. physiologic concepts remained relatively static until the publication, in 1628, of *de Motu Cordis* by William Harvey. Harvey collected, in clear and definite form, ideas which had been stated but not confirmed by experiment.

Great names crowd the pages for the next century and a quarter. Our interest begins about 1853, the year of the founding of the Minnesota State Medical Association.

In any attempt to characterize in a journal article the progress of medical thought and practice of the past one hundred years, one must use the briefest of sketches. Hence, these vignettes will be etched about the border of the subject as indications only. The great mass, the central core, can be found only in the almost inconceivable amount of medical literature of the period from mid-century to mid-century.

Progress in medicine has been like that throughout nature and the history of man: revolutionary as well as evolutionary, with new starts in various directions, dependent on new concepts and new techniques. The physician of the nineteenth century is in process of becoming a scientist. He takes his place at the bedside of the patient. He follows the way nature has pointed out in the teaching of the biological sciences.

The nineteenth century brought a new aspect to the career of the physician. He becomes now no longer entirely dominated by systems.

Eminently experimental scientific positivist biological currents developed. The sorcerers and priests of ancient times, the astrologer or chemist of the fifteenth century, the bloodletter of the seventeenth, and the philosophizing academicians of the eighteenth have faded.

The eighteenth century had been characterized by the formation of theoretical systems. The middle of the nineteenth century found many of them still having violent advocates and corresponding opponents. In fact, remnants of some of them can be found extant today, and will persist so long as the mind of man retains its characteristic limitations. To name only a few: the animism of G. F. Stahl (1660-1734); the plethora of Hoffmann. One can still find Friedrick Hoffmann (1660-1742) Drops and Anodine which he introduced and sold at a handsome profit. One is often still importuned to use the "tonics" of his systems. John Brown (1735-1788) was the creator of Brunonism—the normal excitability of organs and the proper dosage of the stimuli thus constituting the state of health. In therapeutics sedatives were prescribed in the case of too much excitation (sthenic conditions) and stimuluation in depressed (asthenic) states.

François Joseph Victor Broussais (1772-1838) had served as an army surgeon in Napoleon's campaigns. He carried his rough schooling into his medical teaching. His therapeutics were sanguinary. Gastroenteritis was the basis of all pathology. A powerful antiphlogistic or weakening regime was adopted, the main features of which were to deprive the patient of his proper food and to apply leeches all over the body. Bloodletting became a sovereign remedy.

Franz Anton Mesmer (1734-1815) founded Mesmerism. Supporting the concept of the influences of the planets on physiological and pathological phenomena, he added to it a "magnetic therapy" derived from the ancient idea of curing by the laying on of hands. The American counterpart was the famous tractors of Elisha Perkins, a respected practitioner of Norwich, Connecticut—five guineas a pair.

Christian Friedrich Samuel Hahnemann (1758-1843) proclaimed the principle of "similia similibus curentur"—cure by drugs which produce a condition similar to the disease. Thus we have "homeopathy"—the treatment should be directed entirely against the symptoms, not against the disease. Another principle of the cult was that of potencies—successive dilutions of one in fifty, each such dilution increasing in potency until the thirtieth. The rise of homeopathy can be traced to the indiscriminate use of quinine and calomel

---

From the Nicollet Clinic, Minneapolis, Minnesota.
Dr. White is Professor of Medicine, University of Minnesota Medical School.

and in excessive dosage. It did no harm at a time when polypharmacy and shotgun prescriptions held sway in the ranks of regular medicine. Homeopathic physicians still had an enormous vogue as late as the beginning of the twentieth century.

P. C. A. Lewis (1787-1872) of France introduced the statistical method as a means for the scientific clinical investigation of disease. By it he was able to demolish Broussais' system.

In this period when experimental medicine was triumphantly asserting itself, but when ancient therapeutic ideas were still flourishing, we see the greatest contrasts in the history of therapy and pharmacology; on the one hand, the Viennese clinicians affirming that all treatment should be withheld in acute diseases, on the other, the disciples of Broussais who continued to practice bloodletting on a vast scale. New therapeutic fantasies, such as magnetism and homeopathy, existed along with the return to ancient methods, such as hydrotherapy, dietetics and other physiological methods. The pharmaceutical industry began to develop in Germany, England, France and the United States. Violent contests developed between those who in the treatment of febrile diseases advocated antipyretic remedies, the partisans of hydrotherapy, and those who tended toward therapeutic nihilism. Even as late as the turn of the century William Osler was reputed to be largely nihilistic in therapeutic practice. He once pointed out that there were scarcely more than a dozen and less than twenty really effective remedies in our armamentarium at that time.

Baths in various forms as therapeutic measures had survived throughout the ages. Spas and hot springs were in vogue. Dietetics was largely a matter of tradition and lacked the knowledge of body chemistry and metabolism of today. Physical therapy had its proponents but lacked the facilities and organization by which today it contributes so effectively to physical rehabilitation. Rest and exercise were known each to make a contribution toward restitution in certain fields.

Introduction of new drugs and discovery of active principles of many already in use were factors in making this an important period in pharmacology. Morphine, strychnine, quinine and atropine were in use and in 1859 Niemann first prepared cocaine. If one adds the crude preparations of mercury, iodides, iron, ipecac, alcohol, ether and chloroform the list is about complete. Pravaz described the first hypodermic syringe in 1853, thus opening up an entirely new field for the administration of drugs parenterally.

Justus von Liebig (1803-1873) had established the first laboratory of organic chemistry in connection with university teaching in 1826. He discovered hippuric acid and other uric acid compounds as well as chloral and chloroform. The most important step in establishing the new organic chemistry was the synthesis of urea by Wöhler in 1828. The scientific basis of nutrition was established by Max von Pettenkofer (1819-1901) and Karl Voit (1831-1908) who studied metabolism during activity and repose and measured oxygen consumption and heat production (calorimetry), using hermetically sealed chambers large enough to contain the animal under investigation and requiring long hours and days in the study.

Claude Bernard (1813-1878) was author of the aphorism that on entering the laboratory one should divest himself of the imagination as one does an overcoat. He was equipped with great experimental ability and constructive imagination, both greatly needed in the advance of science. He was a pioneer in endocrinology, establishing by 1857 the glycogenic function of the liver and laying the foundation for its metabolic relation to diabetes.

Ludwig von Helmholtz (1821-1894) invented the ophthalmoscope in 1851.

The most important and representative figure of the mid-nineteenth century is no doubt Louis Pasteur (1822-1895). He began as a chemist, studied fermentation by bacterial action and went on to disprove the theory of spontaneous generation which was until then a source of bitter discussion and error. His many discoveries were fundamental in medicine including the famous treatment of rabies, but the medical historian Garrison emphasized "the principle that pathogenic properties of a virus can be attenuated or heightened by successive passage through the bodies of appropriate animals led to one of the most luminous thoughts in the history of science—that the origin or extinction of infectious disease in the past may be simply due to the strengthening or weakening of a virus by external conditions."

Rudolph Ludwig Karl Virchow (1821-1902) taught pathology at Berlin until 1849 when he was forced to leave on account of his political beliefs. After seven years at Würzburg as professor of pathology he returned to Berlin having laid the basis of his epoch-making work on cellular pathology, replacing the ancient structure of humoral pathology which had dominated medicine for more than 2000 years. In 1847 he founded the journal which was to be the most famous for half a century, the *Archiv für Pathologische Anatomie und Physiologie und für Klinische Medicin.*

Robert Koch (1843-1900) discovered the tubercle bacillus in 1882. In consequence we have in our hands the means by which the "white plague" as pulmonary tuberculosis was once known—the captain of the men of death in the statistics of scarcely more than a generation ago—is being conquered. The bovine type causing the lymphatic form known as scrofula has already disappeared in those areas in our country and in the world where tuberculosis in cattle has been eliminated or where pasteurization of all milk for human consumption is compulsory.

Illustrative of the change in spirit and tempo of treatment over the centuries is the epic of "the countess powder" (pulvis comitesse). In 1638, the wife of the viceroy of Peru, the Countess of Cinchon, lay ill with an intermittent fever in the palace at Lima. A friend of her husband had learned of the virtue in fever of the bark of a certain tree and had sent a parcel of it to him. Administered by her physician, a rapid cure was effected. The tree itself was not described until exactly 100 years after the first use by the Countess, and the famous botanist Linnaeus established the genus "Cinchona" in her honor.

The plasmodium of malarial fever was discovered in 1880 by Alphonse Laveran. From then on, the application of the growing knowledge of the causative organism, the mode of transmission and methods of destruction of the organism and the vectors contributed to the world-wide conquest of the disease.

The first organized attempt to cross the Isthmus of Panama when American engineers built a railroad in 1849 to 1855 is said to have cost a life for every railroad tie, due to tropical disease. Ferdinand DeLesseps' attempt to build a canal ended in failure. Begun in 1881, it is reported that in September, 1885, the mortality reached the appalling figure of 176.97 per thousand laborers.

Col. William C. Gorgas (1854-1920) conquered yellow fever and malaria and the other tropical diseases of the Canal Zone beginning in 1904. Out of every 1,000 employes in 1906, 821 were hospitalized for malaria and in 1917—fourteen. The death rate from malarial fever per. 1000 population sank from 8.49 in 1906 to 0.11 in 1918.

Since medicine in its broad sense is the art or science of restoring or preserving health, a glance at the average length of life from ancient to modern times will be illuminating. All figures prior to the establishment of governmental birth and death records, of course, are only estimates. However, from the characteristics of fossil remains of the early iron and bronze ages the average is placed at about eighteen years, representing an infant mortality which we can scarcely conceive. As estimated from mummies, the figure was around twenty-two years 2,000 years ago. The next available records are derived from inheritance of property in England in the middle ages and indicate about thirty-five years. The figures do not change essentially up to the beginning of the nineteenth century. At the beginning of the period of our study (about 1852 in England and Wales), the figure is 40.9 and at the mid period about 1900-1902 in the United States is 49.2. Comparable figures for 1945 give 65.8 and for 1951, 68.42. Thus we see that the 27.52 years of life added during this past century of scientific advance is more than all the years previously since the dawn of man. The curve rises now each year. Let us not deceive ourselves: all this advance is not due to technical medical science and art. General standards of living, adequate food supply and shelter, all play a significant part. The most significant contribution, however, is in the unprecedented diminution in maternal and infant mortality and in the suppression of the infectious diseases.

Striking evidence of the advances of medicine—in its broad sense the art or science of restoring or preserving health—is found in a comparative study of mortality from disease and from casualty in war.

Throughout history, disease and epidemics have caused far greater losses in armies than have the casualties. They have often been the determining factor in defeat. World War I, ending in 1918, saw a reversal in this picture, and World War II, together with the present Korean conflict, has seen a saving of life hitherto believed impossible.

Blood transfusions and serum intravenously, together with antibiotics, perform seeming miracles. The Red Cross blood bank transmits these needed elements by airplane from the civilian pool to the theater of conflict in a matter of hours.

To recite within the narrow limits of this article the unprecedented advances of the last century and more particularly of the last fifty years is impossible. Many dates and many great names come to mind. One can sketch in only some of the most significant. No account of medicine in the western hemisphere would omit mention of William Osler (1849-1919). He was a man of wide culture, a wise clinician and was tireless in his pursuit and expositions of medicine. He became professor of clinical medicine at the University of Pennsylvania in 1885 and the first professor of medicine at the newly founded Johns Hopkins Medical School, Baltimore, in 1889. There he introduced a true bedside method of instruction in the wards where the students spent most of their time and acted as "clinical clerks." His textbook, published first in 1892, went through many editions and was the standard guide in the practice of Internal Medicine for a generation in the United States. In 1904 he became Regius Professor at Oxford. He died in 1919.

If an attempt is made to give separate consideration to diagnosis, treatment and prognosis, again confusion enters. Surgery and medicine have become inextricably mingled in that surgery is now no longer simply the removal of an offending part. Physiologic and pathologic processes are modified. The acid-producing portion of the stomach is being removed to modify digestion in duodenal ulcer. The circulation is being reconstituted in many cardiovascular conditions. Endocrine hormonal balances are being changed both by subtraction of all or part of an organ of internal secretion or by implantation of secreting tissue or injection of the hormone or its synthetic analogue.

Endoscopic technique has been developed to the point where the interior of nearly all hollow viscera and somatic cavities can be visualized. Early diagnosis is thus possible in the air passages and pleurae, the pharynx, esophagus and stomach, the anus and rectum to the sigmoid flexure of the colon, the peritoneum and the lower urinary tract. Material removed for biopsy gives opportunity for immediate microscopic assay. Positive diagnosis in many regions is furthered by the various biopsy procedures including the removal of tissue by punch. The Papanicolaou technique carried out by specially trained observers is growing in value in diagnosis of carcinoma of cervix uteri, bronchi, stomach and urinary bladder.

The roentgen ray reveals outlines of structures and cavities with remarkable accuracy. In conjunction with contrast media such as air or radio-opaque substances great diagnostic accuracy has developed and is advancing apace. The gastro-intestinal tract is compelled to reveal changes in its lumen from the oro-pharynx to the rectum. All ramifications of the bronchial tree can be studied.

The gall-bladder dye test reveals physiologic activity, malfunction and the presence—yes, even the absence—of calculi with an accuracy of approximately 96 per cent.

Kidney pelves and ureters can be outlined by means of radio-opaque substances introduced either through the blood stream or in retrograde fashion through ureteral catheters. Calculi, tumors, cysts and changes due to infection such as tuberculosis, pyelitis and ureteritis can be localized. Downward and lateral dislocation of the kidney shadow gives evidence of tumor lying above it as in the adrenal gland.

Localization of lesions in the brain and spinal cord has been greatly advanced by x-ray and electrographic methods. Pneumo-encephalography and encephalo-angiography reveal changes in the x-ray patterns within the skull. By the latter technique also the existence of intracranial aneurysms can be shown and in certain cases ligation of the internal carotid artery on the same side robs the lesion of its dangers. In a few cases local attack on the lesion is feasible.

Electro-encephalography provides a localizing mechanism in the diagnosis of cortical lesions.

Study of adrenal function can be made with accuracy. Substitution therapy with extracts and synthetic analogues can be made to sustain life. The recent production of cortisone gives us a therapeutic arm useful not only in this field but also in rheumatoid arthritis, the carditis of acute rheumatic fever and in many other fields. The influence of cortisone and ACTH on certain types of connective tissue disorder provides an instrument for the study and treatment of what has been roughly designated as the "collagen diseases."

The adreno-cortico-tropic hormone (ACTH) can be used to stimulate the adrenal cortex to put out added amounts of a substance very similar in its action if not actually "cortisone" itself.

Physiological and physical chemistry have developed to a point where the structure of the molecule is no longer secret. Manipulation of the constituent elements permits permutations and combinations almost to infinity. Synthesis permits production of substances of purity greater than can be secured by extraction.

By introducing radio-active elements into substances which are then introduced into the body, the course and sites of deposition can be followed by the Geiger counter and other methods of determining radio-activity. Probably the most striking example in this field is found in the use of radio-active iodine in hyperthyroidism. Given by mouth it is picked up almost in its entirety by the hyperactive thyroid tissue. The "half life" of this isotope is of a few days only. During this short period great numbers of the overactively secreting cells can be destroyed. After a few days the excess radio-activity has disappeared.

X-ray therapy cures many superficial lesions even of malignant character and modifies many physiologic processes. By radium and radio-active implantation many lesions can be reached where the x-ray is inadequate.

The isolation of insulin in 1921 by Banting and Best was followed by purification and modification until the diabetic need no longer suffer the consequences of the disease. Here the art of medicine is exemplified. An effective substitute for an insulin lack is available. The art lies in persuading the patient to pursue uninterruptedly a painstaking and meticulous regime when he has no symptoms to guide him.

Another form of substitution therapy is seen in what was once called pernicious anemia. After Minot and Murphy, about 1925, found the therapeutic value of liver, refinement methods produced an extract which made continuous substitution therapy possible. Again the art of persuasion comes into play.

Our already advanced and still advancing knowledge of hormones and vitamins places in our hands therapeutic aids of great effectiveness.

Our knowledge of the sensitizations and allergies—though still very limited—gives us aid in the successful treatment of some conditions once thought to be purely nervous in origin.

Knowledge in immunology and immunizations have brought about a radical reduction in the incidence and mortality of infectious diseases. The cultivation, identification and immunology of viruses continue to be difficult, but elaborate culture techniques are overcoming our limitations.

Refinements in the preparation of digitalis glucosides have given greater accuracy and safety in the use of these remarkably useful remedies.

The laevo-rotary isomer of quinine, quinidine, gives us control of many cardiac irregularities. Other remedies controlling cardiac irregularities and tachycardia are being discovered.

The anticoagulants have a wide area of usefulness. They have assisted measurably in prevention of intracardiac thrombosis and consequent embolism in cases of myocardial infarction. They are also useful in the prevention and treatment of intravenous thrombosis such as may occur in the deep veins of the legs and less commonly in the pelvic veins. In the recumbency and lessened activity incident to heart failure, the postoperative and postpartum states, old age, anemia and similar conditions, their early and skillfully controlled use prevents much morbidity and even death from pulmonary embolism.

The sulfanilamides and antibiotics are doing in purely medicinal fields something parallel to what antisepsis (and asepsis) did for surgery, although the manner of application and the degree of effectiveness may differ. They are changing the pattern of infections by their bacteriolytic and bacteriostatic actions. Because of the wide spectrum of action of certain of the antibiotics it is becoming in many instances less necessary to identify the invading organisms. Much time and expense can therefore be avoided.

Infant mortality between 1915 and 1948 inclusive fell in the U. S. registration area from 100.2 to 31.12 per 1,000 live births. In Minnesota the fall in the same period was from 70 to 28.33. In Minnesota alone, from 1915 to 1949 inclusive, infant and neo-natal deaths combined fell from 68.8 to 31 per 1,000 live births.

Involutional melancholia introduces a hazard into the period known as "Middle Age." For the unfortunate victim, there is a morbidity period of five to seven years from which recovery usually occurs spontaneously but during which he is a burden to himself, his family and his environment. Suicide also may cost his life, or his reputation or usefulness may be irrevocably impaired. Electro-encephaloplexy, known as "electro-shock therapy" (E.S.T.), under strict control has given an extremely high recovery rate within a period of a few weeks, thus robbing middle age of one of its greatest terrors.

The neo-modern surgery of the chest, lungs, heart and great vessels would be impossible without the newer methods of anesthesia using the physiologic effects of many drugs to control respiration, cardiac action and muscular relaxation.

Hitherto the disorders of the heart and great vessels have been susceptible only to hygienic and medicinal measures. At this point it is necessary to emphasize again the crucial part played by animal experiment in the development of the surgical techniques involved. Without the opportunity to develop dexterity and speed in operating and to learn the efficacy of techniques, no surgeon would dare invade the sacred precincts of the chest in man. Anomalous development is being corrected or compensated for, at least in part. Intrapulmonary arteriovenous aneurysms are being corrected by removal of the portion of the lung bearing the lesion.

In the past, many children who survived the neo-natal period with a malformed and malfunctioning heart and great vessels were doomed to invalidism or to death at about the age of puberty. What is now being done in rebuilding and reconstituting the circulation by surgery would have been impossible, nay unbelievable, twenty years ago. The stenosis of the pulmonary valve frequently seen alone or in combination with other congenital anomalies can be in good part corrected. Coarctation of the aorta is susceptible to surgical correction and is being recognized and corrected in early life. The surgical closure of a patent ductus arteriosus was one of the earliest triumphs in this field and provides a complete cure. The stenosed mitral valve of chronic rheumatic valvular disease is being widened by commissurotomy and other means.

The writer recently saw the photograph of a smiling, happy and healthy looking little girl of five and a half years, in whom closure of a large and incapacitating interatrial septal defect was performed by exquisitely trained surgeons. On September 2, 1952 at the Hospital of the University of Minnesota she had been anesthetized, her body temperature reduced in two hours to 26° C. This is 11° Centigrade below the normal average afternoon temperature of 37° C. or 19.8° Fahrenheit below the normal 98.6° F.

The surgical procedures took one hour and the warming after the closure took forty-five minutes. The actual suspension of cerebral circulation necessitated by the opening of the atria and suturing of the defect was not over seven minutes. By means of induced hypothermia, the oxygen requirements of the brain were thus reduced so that the function of brain cells could survive after suspension of circulation for six to seven minutes, double the survival time at normal temperatures.

This doubling of the time is adequate to allow swift delicate and dexterous intracardiac repair while cerebral circulation is suspended.

A dramatic procedure is that of opening the chest and massaging the heart into renewed activity when it has stopped beating under anesthesia.

Dorso-lumbar sympathectomy modifies in many instances the course of essential hypertension.

A striking illustration of the inextricable mingling of medicine and surgery is found in the way each complements the other in the newly developing treatment of pulmonary tuberculosis. It has been undergoing evolutionary change since the introduction of Forlanini's method of artificial pneumothorax in 1895. It was later attempted to rest the lung and close cavities by thoracoplasty and in suitable cases by phrenicectomy. Definitive treatment by removal of the diseased and cavitated areas has had to await the development of modern methods of anesthesia and the combination of surgery with the use of bacteriostatic and bacteriolytic substances but is now being accomplished.

Treatment for a period of several months by streptomycin and PAS prepares the patient. A carefully planned pneumectomy, lobectomy or segmental removal can be performed. Thus the cavitated areas which had been seeding infectious material into the environment are removed and the patient is freed from the incapacitating lesion. It is heartening to see these patients rehabilitated and seemingly cured. Many are already occupying fulltime jobs. It will take more time to learn how definitive the cure since the procedure is new. In Hennepin County's Glen Lake Sanatorium only eight such operations had been done from the time the institution was opened in 1916 to the end of 1949. Fourteen were done in 1950, 133 in 1951 and 167 in 1952. The operative mortality in this last year was 2.4 per cent. We have in our hands today the knowledge by which tuberculosis in man can be eradicated. The art consists in its application. A systematic program involving early detection in all elements of the population is imperative. Adequate treatment must be followed by rehabilitation and continuous medical supervision. Research must be pursued to add effectiveness. Professional and lay education is needed to insure support for the program.

The fundamental principle in civilization and culture is that knowledge of one shall become the property of all. To the glory of our profession this principle has been enforced throughout the history of medicine. It underlies our medical organizations as in the component societies beginning with the county and district societies up through the state associations and finally the national, the American Medical Association founded in 1847.

Following a report on medical education in 1910 by Abraham Flexner, there has been a great improvement in medical schools. Previous to that time, there were many second and third-rate schools, private and commercial in character. The total number, including good as well as objectionable, was 148 in the United States and seven in Canada—155 in all. This has been reduced to seventy-two four-year schools with high standards. The State governments make a great contribution to this number, furnishing thirty-one of the total. Minnesota has one of the earliest and best.

Before the first World War, our opportunities for graduate education were infrequent. Now anyone desiring training beyond the intern period has no difficulty in securing it in any grade or specialty desired.

Research facilities and institutes have multiplied. The Rockefeller Institute and Hospital have exercised an influence beyond their own size and means. Research has become an integral part of the function of all medical schools whose faculties in both fundamental and clinical branches have wholetime men.

Government agencies are now taking a significant part in the research effort. The National Institute of Health of the United States Public Health Service has a group for the study of such problems as cancer, heart disease and arthritis, to mention the most important at the moment. While purposes of the National Research Council extend into all fields of the national welfare, Medicine has had a share in its support through research grants.

In recent years many leading pharmaceutical houses have not only research projects of their own but have wisely contributed to research in Universities and wherever research facilities are available. Parenthetically, one could wish they could be led to realize how much greater the benefits from this than from the inordinate amounts of money spent in flash advertising which finds its way into the wastebasket.

The modern hospital plays a large part in preserving life and in proving the value of Medicine. In it science and art unite through organization in the pooling of knowledge for the protection of the individual. Hospitals exist in almost every community. Many small towns have institutions with excellent equipment. Here they tend to be private and philanthropic. All larger municipalities maintain hospitals. Warbasse has said: "To the glory of Medicine it may be said that the quality of the institutions has not only steadily but rapidly improved." In many, use of their facilities by Medical Schools provides a strong progressive staff and research is encouraged.

To those who knew the Veterans Administration in previous years, it is gratifying to see the revolutionary improvement in that service where now research is encouraged, with the result that the care of the veteran has improved immeasurably. Reorganized under General Omar Bradley with the aid of the Committee of Deans of Medical Schools, wherever a Veterans Hospital is or can be located near enough to a medical school, staff appointments are made by the deans and research and graduate teaching are fostered. By this means, men of top quality are secured. The task ahead is to prevent deterioration because of political control.

History repeats itself in the shift of preeminence in medical education from one country to another. Italy, France, England and Germany each has had a day of leadership. That the devastation of war in Europe has hastened the shift to the North American continent seems certain. We can only pray that the arts of peace in our country will supersede those of war and that our culture will not be overwhelmed.

Bibliography

Note: Acknowledgement is made to many authorities on medical history, more particularly to the following:

Castiglioni, Arturo: The History of Medicine. (Translated by E. B. Krumbhaar). New York: Knopf, 1947.

Flexner, Abraham: Medical Education in the United States and Canada. Report to the Carnegie Foundation for the Advancement of Teaching, 1910.

Garrison, Fielding H.: The History of Medicine. Philadelphia: W. B. Saunders, 1914.

Warbasse, James Peter: The Doctor and the Public. Philadelphia: Paul B. Hoeber, 1935.

ONE HUNDRED YEARS OF SURGICAL PROGRESS

DONALD C. BALFOUR, M.D.
Rochester, Minnesota

THE ONE HUNDREDTH annual session of the Minnesota State Medical Association is an appropriate occasion for recording the advances in medicine which have taken place in this first century of the Association. I appreciate the invitation to review the progress of surgery during this period, for it is clear that surgery has made a notable contribution to the most conspicuous era in the history of medicine. That is, in the last one hundred years surgery has advanced more than in all preceding centuries.

The Heritage of the Past

Modern surgery is based primarily on the major revelations of Vesalius in anatomy in 1550, of the circulation of the blood by Harvey in 1628, of the work of John and William Hunter in the Eighteenth Century pertaining to inflammation, the anatomy and physiology of the lymphatic system, the healing of wounds, and the ligation of blood vessels in their continuity, of antisepsis and asepsis by Lister through his application of the discoveries of Pasteur, and of anesthesia as applied by Morton and Long.

While John Hunter found surgery a mechanical art and left it an experimental science, the doors of the new world in medicine were opened with the advent of anesthesia, antisepsis and asepsis; but the progress of surgery in the past century has depended on the progress medicine as a whole made during this period. The development of the modern hospital with the evolution of surgical departments, medical education at undergraduate, graduate and postgraduate levels, training schools for nurses, the growth of medical libraries, and the extraordinary advances of visual education and of teaching museums, all have contributed to safe and sound surgical practice. Basically, the phenomenal growth of the art and science of surgery has been made possible through intercommunication, for, as Newman has pointed out, "the progress of civilization has been primarily dependent on intercommunication, and that in the modern as well as in the ancient world this is the first element of progress and the first contributor to the saving of human life and the postponement of death, and the man who extends its scope and builds its way is contributing much to make straight the highway of health." American surgeons, recognizing this, cultivated the practice of visiting surgeons and clinics at home and abroad, always with an open mind, with freedom from national prejudice and with the ability to apply what they saw, and in this way contributed enormously to the development of surgery in America in the forepart of this century.

Contributions From the Basic Sciences

The evolution of surgery to a science as well as to an art has come through correlation of surgery with the fundamental sciences, and groundwork for this reciprocal relation lay in the anatomic schools of continental Europe during the Seventeenth and Eighteenth Centuries. Cushing, in speaking on "Fashions in Surgery" set an approximate date of 1903 "when surgeons not only in this country but in other parts of the world had begun to show an awakening of interest in pathological physiology. . . . Though isolated individuals like Hunter had done so long before, surgeons as a class for the first time had begun to think in terms of function rather than of morphology. . . . Each generation has its investigative fashions which run more or less in the grooves of least resistance or greater promise."

The development of roentgenology during the last century has had a major role in the advances in surgery, for there is scarcely a disease or a pathologic condition in which the roentgenologist cannot contribute valuable and essential information, and it is in interpretation by the experienced roentgenologist that roentgenology has become of inestimable value to the surgeon.

Modern instrument-making likewise has contributed to surgical progress and enormously advanced the major objective of early diagnosis, and has made possible extraction of foreign bodies and excision of tumors which otherwise could not have been removed.

Reduction of Mortality Rates

The evolution of the art of surgery is evidenced

Dr. Balfour is an Emeritus Member of the Division of Surgery, Mayo Clinic, Rochester, Minnesota.

by one of the greatest achievements of the present surgical era; namely, the reduced mortality rate of operations. In the early part of the century, surgery was chiefly concerned with advanced lesions, large tumors and desperate emergencies, and it was in such conditions that pioneer surgeons acquired an enormous experience, for these operations often were of great magnitude and were carried out with what we now consider inadequate facilities. And, since they were limited largely to observation in their evaluation of surgical conditions, they acquired conspicuous clinical acumen and judgment and related this basic experience to the new problems arising from the rapidly expanding scope of surgery. Today, the surgeon has available innumerable aids in basic surgical research, in diagnosis, in interpretation of findings, in surgical technique, in preoperative and postoperative care, and in evaluation of results; but, in the application of these we must not forget the extraordinary competence of those pioneer surgeons who established sound general principles and who paved the way for the achievements of present-day surgery, which has brought such great prestige to American surgery.

"Living Pathology"

The development of modern surgery has made possible, as nothing else could do, the acquisition of knowledge as to the characteristics of diseases during life. Moynihan dramatized this fact by the term "living pathology," and he referred particularly to "the enormous increase in the number of abdominal operations in the early part of this century . . . with the result that we have been enabled to construct a pathology of the living as contrasted with the pathology of the dead." This revelation of the development of lesions and their complications influenced the trend toward earlier operation in those surgical diseases which in their ordinary course are progressive, and this has resulted directly in the saving of countless lives, and surgery in this respect gave a new concept of the course of chronic disease.

Anesthesia

The extraordinary changes which have taken place in all fields of surgery in the last one hundred years have been primarily related to advances in anesthesia, which continues to make conspicuous progress through departments of anesthesiology in teaching hospitals and in providing facilities for intensive investigations of properties of new anesthetic agents, of new preparations for supportive therapy and of new methods of administration.

Similarly, modern chemotherapy has written a chapter in the history of medicine which represents benefits to mankind comparable to those conferred by Lister and Pasteur. The pioneer work of the Oxford group (Florey and his associates) in establishing the bactericidal properties and the therapeutic indications for use of the antibiotics in the prevention and treatment of surgical infections initiated a notable era in the history of surgery. The extraordinary effects of these chemotherapeutic agents have naturally led to their abuse, and their routine use will not compensate for careless technique or disregard of sound surgical principles. As Sir Alexander Fleming, to whom mankind owes an eternal debt of gratitude for the discovery of penicillin, has well said, "antibiotics simply attack the bacteria; the surgeon must treat the patient."

Special Fields of Surgery

The most salient examples of the development of new fields of surgery are in neurosurgery and thoracic surgery. More than thirty years ago, Cushing made the prediction that the neurosurgeon of his day "would have reason for amazement could he foresee the novel procedures which those of the next generation would unquestionably come to develop, for they were only at the beginning." The accuracy of this prediction is seen in the localization and removal of neoplasms of the spinal cord, the treatment of injuries to the head and of lesions of the peripheral nerves, the surgery of the sympathetic nervous system, protruded intervertebral disks and lobotomy for mental disorders. In surgery of the sympathetic nervous system, for example, if one considers the chronic diseases which in their development may be dependent on primary spasticity of arterial supply, it is not too venturesome to predict that by means of operations on the sympathetic nervous system some of the most disabling and serious diseases of modern life may be controlled.

As in neurosurgery, surgery of the thorax is an achievement of this modern era. The advances in our knowledge of the physiology of respiration and circulation, to which research in aviation gave such impetus, have contributed greatly to the safety with which operations on the lung, heart and great blood vessels can be carried out.

Disclosure by surgery of the fact that cancer of the lung is one of the more common malignant lesions, the surgical treatment of pulmonary tuberculosis by excision of the lesions, and the surgery of the great blood vessels and of congenital and acquired cardiac anomalies, mark one of the great epochs in the history of surgery.

In the earlier years of surgery of the thyroid gland, operations were confined to thyroid tumors, adenomatous and colloidal, and to those which were not associated with disturbances of metabolism. The gradual recognition and proof that certain types of diseases of the thyroid gland are responsible for profound toxic disturbances, due to perverted thyroid secretion, and the control of this by iodine, have been one of the triumphs of modern medicine, and operations for toxic adenoma and for exophthalmic goiter followed establishment of these facts.

The surgical management of diseases of the eyes, ears, nose and throat has been radically changed with the introduction of chemotherapy in the treatment of inflammatory conditions. But one of the most dramatic achievements in this field has been the fenestration operation for deafness.

Surgery of the genitourinary system has been almost entirely developed within the century. The outstanding achievements have been in the earlier surgical management of prostatic hypertrophy. In this, American surgeons have pioneered in the development of perineal prostatectomy and transurethral prostatectomy. The latter method was made possible by the introduction of new instruments of precision which in turn made possible satisfactory relief of prostatic obstruction with less disability. In surgery of the kidney and ureter, plastic operations dealing with various types of hydronephrosis have been real advances, and the success with which exstrophy of the bladder can be dealt with by cystectomy and ureteral transplantation has been a genuine surgical triumph.

The wars of this century have given impetus to all fields of surgery, particularly orthopedic surgery, plastic surgery and surgery of the blood vessels, and in the amazing expansion of the field of physical medicine.

The progress of surgery during the past century always will be identified with the advances in abdominal surgery. This has been largely due to two factors, (1) the number and variety of diseases of the abdomen, and (2) the principles of asepsis making possible safe opening of the abdomen. Earlier procedures were undertaken for the relief of serious complications, rather than for the disease itself, and the development of abdominal surgery has clarified, as nothing else could, the nature of these diseases, their course and complications, and has established the rational basis for treatment. Experience in surgery of the gallbladder and ducts has established the principle that removal of the gallbladder gives more permanent results than drainage, and the development of elaborate procedures for reconstruction of the bile ducts is a notable accomplishment. The value of education of the public and the profession in the importance of early recognition of acute disease, for example, appendicitis, is reflected in the negligible mortality rate of this disease today. The results of splenectomy for various disorders of the blood has greatly stimulated the field of hematology, since changes in the blood picture are pathognomonic in many of the diseases associated with splenomegaly.

Special Surgical Conditions

A distinct achievement in this century has been the demonstration that diaphragmatic hernia is a relatively common condition, that it is associated with a definite clinical syndrome, that the condition can be detected by a special roentgenologic examination, and that the hernia can be successfully repaired by surgery. Surgery of the esophagus for both benign and malignant lesions has made extraordinary progress in recent years, although esophageal stricture, cardiospasm and bleeding varices still present unsolved problems. The possibilities of controlling portal hypertension by various surgical procedures are still to be evaluated, but already fundamental achievements have been made. Surgery has contributed much-needed knowledge about diseases of the pancreas, and the fact that total pancreatectomy can be done with maintenance of good health opens inviting possibilities for the future.

The development of surgery of the gastrointestinal tract is a story of persistence in the face of seemingly insurmountable odds, of technical ingenuity and physiologic research, from the crudeness of the first gastrotomy as performed by Oriental surgeons to the finesse of total gastrectomy as it is accomplished today. Surgical treatment of diseases of the large bowel, particularly carcinoma, has become so highly developed that most extensive procedures, such as removal of the entire colon, are now possible with lower rates of mortality than ever before, and with a higher percentage of permanent cures in cases of carcinoma than can be attained in the treatment of carcinoma of any other part of the intestinal tract.

Diseases of the stomach and duodenum are exceedingly common, the benign lesions alone in the aggregate being responsible for more ill health than disease of any other organ. Malignant disease of the stomach takes a heavier toll than does any other abdominal carcinoma. The chief difficulty at present in the treatment of the most common of benign lesions, namely, peptic ulcer, is inadequate knowledge as to the cause of the disease. In treatment of malignant lesions the handicap consists largely in the lack of opportunity to make an early diagnosis.

The surgery of peptic ulcer began with treatment of the complications of the disease, the most frequent indication for surgery being pyloric obstruction. It was found that such obstruction could be circumvented by gastroenterostomy, and the operation was so spectacularly successful in a high percentage of cases that it became the established procedure for duodenal ulcer, whether or not obstruction was present. Then disappointing results supervened. It soon became evident that in cases of early duodenal ulcer, particularly if the patients were young and gastric acidity was high, there was a special risk that ulcer would recur, usually in the jejunum, and in relation to the new stoma similar to that which a duodenal ulcer bears to the pylorus. Gastroenterostomy, however, continued to be employed for lesions of a type for which it had been shown by Mayo and Moynihan to be efficient. It is still indicated in carefully selected cases, for it has the advantage over all other surgical procedures for ulcer in that it is completely reversible.

Nevertheless, the disappointing results of gastroenterostomy in certain cases led to the introduction of various procedures designed to avoid use of the jejunum. The earliest of these were operations on the pyloric outlet, and they were based on the assumption that pylorospasm might be a factor not only in producing the ulcer but also in preventing its healing. By ablating the muscle and thus relieving the pylorospasm, it was thought that an ulcer which could not be removed would undergo healing and sufficiently reduce secretory activity to prevent recurrence of the lesion. After they had undergone various types of pyloroplasty, a considerable percentage of patients remained well, but the ineffectiveness of the operation in some cases was an indication for more radical procedures.

This trend in turn led to performance of partial gastrectomy, which became the operation of choice in chronic duodenal ulcer. Some sequelae of partial gastrectomy have been responsible for the employment of methods to avoid the use of the jejunum; for example, the Billroth I operation, vagotomy, pyloroplasty and various combinations of these. The recent attention which has been drawn to the usefulness of gastroenterostomy, particularly with vagotomy, is of significance. The safety with which extensive gastrointestinal operations can be carried out today is indicated in a recent report by Moroney of 100 cases in which a segment of the colon was substituted for a removed stomach. The great variety of procedures, either single or multiple, which have been suggested in the surgical treatment of peptic ulcer can be evaluated only after the passage of time. Treatment, whether medical or surgical, will continue to be empirical until the cause of the disease is known.

Comment

The future of surgery depends on recognition of the fact that superlative skill, judgment and surgical experience are the first requirements of a great surgeon. The science of surgery will rest on a still firmer foundation when its development is inspired and directed by those who are masters of the art of surgery. Whatever the future of surgery may hold, it is safe to say that the past century will be known as the surgical era. In this respect, the surgical profession of Minnesota may well take pride in the part it has had in these remarkable advances which are represented in the 100 years of the Minnesota State Medical Association. It has been the integration of sound clinical practice, a high level of undergraduate and graduate teaching, and productive clinical and experimental investigation which has brought the epoch-making contributions to the science of surgery through which the better care of the surgical patient has evolved. In all of this, the profession of Minnesota, the Medical School of the University, and the Mayo Foundation have had conspicuous parts. These foundation stones, added to those of past eras, have been well and truly laid, and it is upon these that the surgery of the future will be built.

EARLY ORTHOPEDIC SURGERY IN MINNESOTA

CARL C. CHATTERTON, M.D., F.A.C.S.
Saint Paul, Minnesota

FROM the time of Andry, the word "orthopedic" has been identified with the treatment of deformities, and an "orthopedist" has been one who treated deformity. But it was not until Stromeyer, in 1830, demonstrated the feasibility and value of subcutaneous tenotomy, that orthopedics obtained its first firm foothold in the profession. Both before and after Stromeyer's time, however, mechanico-therapy was the fundamental part of treatment of deformities. In an essay by Dr. H. J. Bigelow in 1844, in addition to clubfoot, curvature of the spine, and torticollis, he treated stammering and strabismus, and it seems clear at the date he wrote, that operative treatment was synonymous with subcutaneous tenotomy or myotomy, and that any condition requiring either of these operations was to be classified under orthopedic surgery.[4]

About 1852 an American surgeon, Dr. H. G. Davis, published an essay in which he advised the use of elastic traction by means of portable apparatus in the treatment of hip-joint disease. He also demonstrated the value of traction apparatus for overcoming the deformities occasioned by chronic articular lesions. The treatment of Potts' disease was demonstrated by Dr. Davis and Dr. C. F. Taylor. Dr. Lewis A. Sayre, along with Dr. Taylor, amplified Dr. Davis's apparatus for the treatment of chronic and progressive deformities, and under their leadership the treatment of chronic joint disease and spinal disease became a distinctive feature of the American School of Orthopedic Surgery.[13]

The most reliable way to be sure of those first interested in orthopedic surgery in Minnesota, requires a search of early articles written on various subjects that were especially orthopedic in nature, and a check of the faculties of the various institutions of medical instruction that appeared in Minnesota's infancy.

Previous to 1870, in a single room of the old stone house in the rear of St. Joseph's Hospital, a preparatory school was founded by Dr. Daniel Hand, Dr. Alex Stone, and the elder Dr. Stewart. Equipment: one pine table, a few kitchen chairs, some books, and a skeleton. Material: an occasional amputated limb handed out to them by the old hospital.[3]

In 1870, the Saint Paul School of Medical Instruction was formed by a number of Saint Paul physicians who believed greater facilities should be afforded students desiring to obtain a preparatory medical education than could be obtained from any single instructor. The object of their school was not to take the place of a regular college, but to prepare students for a better understanding of lectures they might hear in a college course. This enterprise was transferred to Minneapolis in 1878. It continued until 1885 when the faculty differed among themselves, and the Saint Paul portion withdrew and established the Saint Paul Medical College at 204 West Ninth Street.[2]

The Saint Paul Medical College claimed success because of the unusual amount of its available clinical material, and a building centrally located on the principal business street, near streetcars. The building commanding a fine view of the Mississippi, had a large comfortable lecture room, a chemical laboratory and clinical room, and a large, cool dissecting room. The lecture room was used by the Ramsey County Medical Society for monthly meetings, and to those deliberations the students were invited. The faculty was composed of: Alexander Stone, M.D., Dean and Professor of Obstetrics, Gynecology, and Medical Jurisprudence; Charles A. Wheaton, Professor of Anatomy and Clinical Surgery; Dr. F. Dedolph, Professor of Pathology and Dermatology; Dr. Talbot Jones, Registrar, Professor of Psychology and Diseases of Children; Dr. F. A. Dunsmoor, Professor of Surgery; Dr. Francis Atwood, Professor of Ophthalmology and Ototomy; Dr. James Davenport, Professor of Materia Medica and Therapeutics; Dr. Jay Owens, Professor of Theory of Practice of Medicine and Diseases of the Throat; Dr. Ernest F. Horst, Professor of Nervous Diseases and Orthopedic Surgery; and George F. Weitbrecht, Professor of Chemistry.

At a later date the St. Paul Medical College merged with the new Minnesota Medical College at Minneapolis. This college occupied a part of a magnificent building known as the old Winslow House, situated in East Minneapolis, having a capacity of three hundred rooms. This school was formally opened on October 31, 1881.

Dr. Horst was Professor of Orthopedic Surgery in this school also.

In 1883, a plan prepared by President Folwell and others at the University[12] was presented to and adopted by the Board of Regents, creating the College of Medicine and Surgery, not as a teaching body, but as an examining body. The Legislature passed the first State law requiring all physicians to register with the faculty of this college. In 1887, the Legislature took a hand in medical affairs in the creation of an Independent Board of Medical Examiners under the first law of its type in the United States known as the Examination Law. This law discarded the diploma as evidence of medical education, and required examination of every applicant for license to practice medicine in Minnesota. In February, 1888, at Dr. Millard's instance, representatives of the faculties of the Minnesota Hospital College and Saint Paul Medical College appeared before the Board of University Regents with the offer to surrender their charters and properties in the city for the temporary use of the State. This offer was accepted, and the College of Medicine and Surgery, Homeopathic Medicine and Surgery, Dentistry and Pharmacy was established at the University. Dr. James E. Moore was elected Professor of Orthopedic Surgery.

On April 6, 1875, the Minnesota Orthopedic Institute was founded. The object of the corporation was the manufacturing and vending of mechanical surgical apparatus, and the application of such apparatus to the deformities and deficiencies of the human body, wherever surgical, mechanical or electrical apparatus appliance or movement treatment is required. The first officers were Dr. J. H. Stewart, President; Dr. E. W. Hand, Chief Surgeon; Dr. C. E. Smith, Assistant Surgeon; Dr. R. W. Sweeney, Chief Surgical Mechanic. The office was at 7 West Third street.

Dr. Jacob H. Stewart was Surgeon to the First Minnesota Regiment in 1861. On May 30, 1928, the chancel window at the new Fort Snelling Memorial Chapel was dedicated to him as a Regimental Surgeon and an outstanding figure in Minnesota politics, State Senator, Representative in Congress, Postmaster of Saint Paul, Surveyor General of Minnesota, four times Mayor of Saint Paul, Ramsey County Physician, and was apparently interested in mechanical orthopedic apparatus.

Many interesting and instructive articles were published by these early pioneer physicians. The first I have been able to discover on orthopedic surgery were as follows:

1. *Orthopedic Surgery as Applied in the Use of the Tenotome,* by Dr. A. B. Stewart, Winona, Minnesota. Northwestern Medical and Surgical Journal, 1:349-359 (May) 1871.

The article is a clever dissertation of the use of the tenotome. Dr. A. B. Stewart began its use in 1864. Principal discussion of the paper is whether to cut from without inward, or whether from within outward. He mentions muscles which might be cut by a tenotome; nothing about sterilization of the tissue or knife, nor of cold compresses after operation. Many operations were done without anesthesia of any kind.

2. *Transactions of the Minnesota State Medical Society,* Wednesday, June 22, 1881. Dr. Horst read the report of the Committee on Orthopedics. This was its first report and was illustrated by presentation to the Society of a young man and a boy, both of whom were afflicted with spinal curvature and wore the paper jacket used by Dr. Ernest F. Horst, which was claimed to be superior in various respects to the plaster apparatus introduced by Dr. Sayre.

3. *Early Diagnosis in Hip Joint Diseases* by Dr. James E. Moore. Northwestern Lancet, 8:141-144 (June 1) 1888.

This is a very classical and interesting article, and outside of the x-ray findings and present-day laboratory technique, it is modern in its conception.

4. *Orthopaedic Surgery,* by Dr. James E. Moore. Northwestern Lancet, 9:231 (Sept. 1) 1889.

5. *Treatment of Hip Joint Diseases,* by Dr. James E. Moore. Northwestern Lancet, 9:311 (Dec. 1) 1889.

6. *Orthopaedic Surgery,* by Dr. Arthur J. Gillette. Chairman of the Section. Transactions of Minnesota State Medical Society, Page 66, 1890.

7. *Prognosis in Orthopaedic Surgery,* by Dr. J. E. Moore. Northwestern Lancet, 10:18-20 (Jan. 1) 1890.

8. *Rachitis and Resulting Deformities,* by Dr.

Arthur J. Gillette. Northwestern Lancet, 10:179 (June 1) 1890.

9. *Potts' Disease,* by Dr. Arthur J. Gillette. Transactions of the Minnesota State Medical Society, Pages 183-193, 1892.

10. *Orthopaedic Surgery.* A book published by Dr. James E. Moore in 1898.

There may have been other articles published during this time by men on orthopedic subjects, but those mentioned seem to be the early papers in Minnesota.

Dr. Ernest F. Horst was born at Fort Wayne, Indiana, in 1853. In May, 1859, he came with his parents to Saint Paul and obtained his elementary education in private and public schools of the city, after which he entered Concordia College at Fort Wayne, where he studied for two years, and then spent two years at Northwestern University. He commenced the study of medicine in Saint Paul, attending Saint Paul Preparatory Medical School. From there he went to Chicago in 1874 to attend lectures at Rush Medical College. In 1876, he was graduated from the University Medical College of New York City, and the same year was appointed Junior Assistant Physician and Surgeon to the Hospital for the Ruptured and Crippled in New York City. In 1879, he returned to Saint Paul to engage in practice. He died in Saint Paul on March 26, 1909.[1] He was a man of medium stature, modest, unassuming, and capable. He did some work at St. Joseph's Hospital. His office was at Third and Maria.[10]

Dr. James E. Moore, surgeon, was born in Clarkville, Pennsylvania, March 2, 1852. He died from pernicious anemia in Minneapolis on November 2, 1918. In 1871-72 he studied medicine at the University of Michigan at Ann Arbor and took a second course at Bellevue Hospital Medical College, New York, where he was graduated in 1873. He moved to Minneapolis in 1882. In 1886, he went to Europe and when in London studied at the Royal Orthopaedic Hospital. He took special instruction in surgery, and particularly in orthopedic surgery at the New York Orthopaedic Hospital. Upon returning to Minneapolis in 1888, he confined his work to surgery—the first in the Northwest to limit himself to that specialty. He was a member of the American Orthopaedic Association, Western Surgical Society, and Southern Surgical. He was chairman of the Surgical Section of the American Medical Association in 1903. As a teacher, he was classed as one of the four great teachers of surgery in the United States. He published a text on Orthopaedic Surgery in 1898, and wrote and published over 200 papers on surgical subjects. In his early years, he was devoted to orthopedic surgery, but later, as Professor of Surgery at the University of Minnesota, taught general surgery of the highest standard.

Arthur J. Gillette was born October 28, 1863 on a farm now occupied by the Swift plant in South Saint Paul. He died in Saint Paul on March 23, 1921. He attended a rural district school, later enrolling as a student in Hamline University in Saint Paul. At twenty, he entered Minnesota Hospital College where he studied from 1883 to 1885, when he transferred to the newly formed Saint Paul Medical College, and obtained a degree in 1886. Following his graduation, he went to New York, where he took a course in the newly recognized specialty of orthopedic surgery under Dr. Sayre. He served one year as a resident in the New York Orthopaedic Dispensary and Hospital. Upon returning to Saint Paul, he began the practice of general medicine, since orthopedic surgery as a specialty was an unheard of innovation in the West. After 1890, he limited himself to orthopedic surgery. After showing the need and accomplishments by teaching the profession through practice and propaganda, he was offered an instructorship at the University of Minnesota in 1895. In 1897, he was elected Clinical Professor and in 1898 Full Professor. In 1913, he was given charge of an Independent Department of Orthopaedic Surgery. His published papers covered almost all phases of orthopedic surgery, were of careful logic, clear, and concise. He was a charter member of the American Orthopaedic Association, and its president in 1901, and was President of the Minnesota State Medical Association in 1917. Essentially conservative, he was among the first to operate for fracture of the neck of the femur. Dr. Gillette's most important work was his effort in establishing the first state-supported orthopedic hospital and school in the United States. His first known effort to secure state aid for crippled children was a paper presented before the Board of Charities and Corrections of the state, at a meeting in Mankato. The next year he appeared before the Legislature, and due to his efforts a small appropriation was approved. First a ward, then a building was used at the City and County Hospital (Ancker Hospital) until the building of the present hospital at Phalen Park, Saint Paul, in 1911-12. At that time all the children were transferred to the institution that bears his name. When orthopedic surgery was still in its infancy, he brought Minnesota to the front rank. His vision and persistence were soon followed by other states establishing schools and hospitals for their crippled children and adults.

It is my best judgment that Dr. Ernest Fredrick Horst was the first trained orthopedic surgeon in Minnesota. Dr. J. E. Moore was the first real teacher of orthopedic surgery in the state. Dr. Arthur Gillette was the first to envision the care of the indigent cripple by the state, and through his efforts the first state-supported hospital (and school) was established.

It is impractical in an article, limited in space as this one is, to tell of the careers of the following orthopedic surgeons, now deceased, who have practiced in Minnesota: Charles Reed, Emil Geist, Alex Colvin, Albert Flagstad, Wm. Von der Weyer, Joseph Kutn, Mark Tibbits, Vernon Hart, Otto F. Schusler, Paul Geisler and N. K. Knauf. The same applies to the group of orthopedic surgeons who are now in active practice and have made valuable scientific contributions during the last half of the past century.

Acknowledgment

A great deal of information contained in this article was obtained from Dr. John M. Armstrong who completed the History of Medical Practice in Ramsey County up to 1900 (Minnesota Medicine, Vol. 21, 22) and also from Dr. Arthur Hamilton's History of Medical Practice in Hennepin County up to 1900 (Minnesota Medicine, Vol. 22, 23).

References

1. Andrews, C. C. (Ed.): History of St. Paul, Minnesota, p. 304. Syracuse, N. Y.: D. Mason & Co., 1890.
2. Armstrong, John: Personal communication.
3. Beard, R. O.: History of the Medical School. Minnesota Alumni Weekly, 20:4-6 (May 5) 1921.
4. Bigelow, H. J.: Manual of Orthopedic Surgery. A dissertation which obtained the Boylston prize for 1844 on the following question: "In what cases and to what extent is the division of muscles, tendons, or other parts proper for the relief of deformity or lameness?" Boston, 1845.
5. Kiehle, D. L.: History of Education in Minnesota. Minnesota Historical Society Collections, 10:381, 1905.
6. Kuhn, J. G., and Osgood, R. B.: American Explorers in Orthopaedic Surgery. (Pamphlet: no date, no paging).
7. National Encyclopedia, 5:388.
8. Neill, E. D.: History of Ramsey County and of the City of St. Paul, p. 367. Minneapolis: North Star Pub. Co., 1881.
9. Northwestern Lancet, 1:29 (November 15) 1881.
10. Plondke, F. J.: Personal communications, February 6, 1941.
11. St. Paul Daily Press, March 27, 1875.
12. St. Paul Pioneer Press, May 30, 1928.
13. Shaffer, N. M.: Brief Essays on Orthopaedic Surgery. New York: D. Appleton and Co., 1898.

STATE BOARD OF MEDICAL EXAMINERS

(Continued from Page 343)

and four of these reinstated since 1928. Thirty-three have been suspended, with twenty-two reinstated.

The Minnesota Basic Science law has been tested in the Minnesota Supreme Court on several occasions and has always been upheld. The right of an individual to free choice of physician has been established in Minnesota Supreme Court in several instances. A suspension of license imposed by the Board was fought by one physician to the United States Supreme Court where the action of the Board was upheld. Another hard-fought case went to the United States Supreme Court, when a layman in Minneapolis was convicted of violation of the Federal Pure Food, Drug and Cosmetic law in the sale of a product called "Powder X." His conviction was upheld, and he paid a fine. A recent opinion of the Minnesota Supreme Court held that vitamins are drugs and not food and must therefore be sold in accordance with the pharmacy laws. This eliminates the sale of vitamins from grocery or any store other than a drug store.

The Board reports all court cases in Minnesota Medicine in order that the profession may be well informed.

An annual directory of all registered physicians is printed annually and has a wide distribution among law-enforcing agencies, medical societies, insurance and business companies, universities and libraries.

The Board is fortunate in having excellent medical laws that govern its procedures and support its actions.

PROGRESS IN PEDIATRICS IN MINNESOTA

1853-1953

O. W. ROWE, M.D.
Duluth, Minnesota

WHEN the Minnesota Medical Society was organized, the field of pediatrics as a branch of medical science had not developed. The members of the new society had no information on the development of children or on their physical and mental health from infancy through childhood and adolescence. The literature—historical and current—was scanty. Some very early observations suggest that a few medical conditions were recognized, but in primitive times little value was placed on infants' lives. The only concern seems to have been the elimination of the unfit and the unwanted.

Hippocrates recorded the first observations that could have been of help to the early practitioner in the care of children. He thought that impure water and improper nutrition might be the causes of certain diseases and that cures were brought about by natural processes and that treatment should be directed towards supporting these forces. Until the 18th Century, few contributions were of value in establishing a scientific basis for practice in this field. These offerings were often highly speculative and the treatment empiric. The busy medical practitioner had to depend on his own observations and experiences in the care of children which left him almost totally unprepared to meet the demand of what must have been a large part of his practice.

More than thirty years elapsed between the foundation of the medical society and the organization of a medical school at the University of Minnesota. Progress during this period was very slow. The general practitioner was not without some pediatric assistance, however. Jacobi, the father of American pediatrics, gave the first lecture on clinical pediatrics at the College of Physicians and Surgeons in New York in 1857. This example was followed slowly by the medical colleges, and divisions of Pediatrics were formed, usually attached to the Department of Medicine, but occasionally to the Department of Obstetrics and Gynecology. Medical graduates from New England and the middle states who had had the advantage of such innovations migrated to the larger cities in our state and to the large number of small towns scattered in our rural and mining areas. These men brought with them some measure of formal professional training which stimulated those with whom they had contacts.

That the practice of pediatrics progressed slowly through this period is indicated by the first paper on this subject published in Minnesota. In the second issue of the *Northwestern Medical and Surgical Journal,* published in 1872, there appeared an essay by Brewer Mattocks, M.D., of Saint Paul, entitled "Children: Their Diseases and Treatment." The conditions inducing him to write on this subject were: "Fully one half of the deaths that occur in the daily practice of the physician are of infants—children under five years of age. Fully two thirds of the patients we are called upon to visit are children." His plea was for a more sympathetic attitude on the part of his fellow practitioners. He evidently believed that sympathy would lead to a desire of knowledge and eventually to better care of their little patients. It is regretted that his efforts failed to produce the desired results.

Progress was also very slow during the next two decades. The few contributors confined themselves largely to the symptoms and treatment of disease. Few of these publications were available until after the organization of the Section of Pediatrics of the American Medical Association in 1880. The earlier meetings of the section were concerned with such clinical problems as diphtheria and membranous croup. These reports and the entire program of the first meeting of the American Pediatric Society in 1899 became available. At this meeting there was one paper on diarrhea of infants and another on the feeding of infants. The absence of knowledge of feeding even well infants with artificial foods forced many practitioners to become ardent propagandists for maternal nursing. The feeding of the sick child was too often influenced by the

---

From the Department of Pediatrics of The Duluth Clinic, Duluth, Minnesota.

teaching of Broussais and others who, following purging and occasional bleeding, ended with systematic starvation.

The first orderly attempt at artificial feeding of infants was introduced by Rotch of Harvard in 1896 and was elaborated and made available to the general practitioner by Holt in the first edition of "The Diseases of Children." This was an intricate mathematical exercise requiring more knowledge than was available. "Top milk" feedings were used almost exclusively and percentages of fats, carbohydrates, and proteins meticulously calculated for each formula. All of this was extremely complicated. A chart designed by Charles Hendee Smith to simplify the problem was one of the most complex figures distributed by *Archives of Pediatrics*. Often a mother, after her baby failed to gain when following the advice of her physician, was forced to use one of the "prepared foods" available in the drug store on which her baby would gain rapidly. These prepared foods were essentially high-carbohydrate, high-calorie foods and were sold in large quantities.

It was Haubner of Leipsig, later of Berlin, whose work first placed Pediatrics on a scientific basis. With Rubner, he investigated and devised a method of estimating the complete metabolism and energy quotients in various conditions of infancy. Haubner, in addition to being a distinguished teacher and organizer of scientific investigations in the field of medicine, established a school for training men to become leaders and teachers in pediatrics. One of these, Dr. Julius Parker Sedgwick, became the first full Professor of Pediatrics in the medical school in the University of Minnesota.

The medical school of the University of Minnesota was organized in 1888. The three private medical schools of the Twin Cities surrendered their charters and later the medical school of Hamline University joined the new organization. Under the department of medicine lecturers, Dr. Charles L. Wells is listed as giving some attention to the branch then spoken of as pedology. It was not until 1895 that Dr. James Trent Christison appeared as a clinical lecturer in pediatrics. Dr. Christison was an excellent teacher and a wise counsellor in this branch of medicine. It was at his request that the hours assigned to pediatric instruction were increased from 90 to 200 hours. He maintained his interest and enthusiasm for pediatrics until he retired some forty-five years later. His first title was Assistant Professor of Pediatrics under the Department of Medicine. His last was Assistant Professor of Pediatrics, Emeritus.

Dr. Walter Reeves Ramsey appeared on the scene two years after the advent of Dr. Christison. He was an excellent teacher. He exercised his influence through his wide acquaintance and position on many boards for the advancement of the department and in ironing out differences which were bound to occur in a growing institution. One of Dr. Ramsey's greatest contributions was the organization, building and equipping of the Saint Paul Children's Hospital. This was the first hospital in the state devoted exclusively to children. The hospital, in addition to its own intensive program, gives instructions to interns of other hospitals and has many other outside activities. Dr. Ramsey is now retired with the title of Assistant Professor of Pediatrics, Emeritus. At the beginning of the century, Doctors Christison and Ramsey gave practically all of the pediatric instruction at the University Medical School.

In 1905, Dr. Julius Parker Sedgwick came to Minneapolis to practice pediatrics. He was the first man in Minnesota to limit his practice exclusively to this branch of medicine. He taught pharmacology and physiological chemistry at the University and later became interested in the development of the pediatric department. On November 3, 1915, the minutes of the Board of Regents made the following statement:

> "Voted on the recommendation of the administrative board of the Medical School to recognize as departments, the present divisions of Pediatrics and Eye, Ear, Nose, and Throat, with the understanding that this action becomes effective November 1, 1915, and that the present heads of the divisions are designated as heads of the new department."

In the *Medical School Bulletin* for 1914-1915, Dr. Julius Parker Sedgwick's title is given as Associate Professor of Pediatrics and Chairman of the Division of Pediatrics. He was promoted to full professor and chairman early in 1915 and, in November, he was named department head. Dr. Sedgwick was well equipped to evaluate and utilize to its fullest extent the enormous amount of original work done in the clinics and laboratories, both here and abroad. He was a man of wide vision and great organization ability. He and his associates, in the brief period of eight years, established a department that ranked as one of the foremost in the nation in research and teaching. With the assistance of Professor Jennings C. Litzenberg of the Department of Obstetrics, he organized the Newborn Clinic—the first of its kind in America. Many of the investigations of this department were of immediate value to the practicing physician. One of these was the study of the comparative value of artificial feedings and maternal nursings. He succeeded in getting a large proportion of the mothers to nurse their babies. The precipitous drop in infant mortality in areas where breast nursing was established indicated a relationship between maternal nursing and the lowered mortality rate. He believed that most mothers, if encouraged and properly instructed, could nurse their babies. Dr. E. J. Huenekens, some years after this program was in effect, showed that 93 per cent of the mothers in Minneapolis could nurse their babies for three months and nearly 80 per cent to the ninth month. Professor Sedgwick's research was not limited to the newborn. He and his outstanding associates investigated many fields in Pediatrics. He edited Freers's two books on Pediatrics. In addition to the work in this department, he enjoyed a large private practice until he became a full professor and head of the Department of Pediatrics. In his private practice, he attracted a group of exceptional men, most of them trained in the European centers. These men also served in various capacities at the University. Among these was Dr. Frederick Rodda, who, after Dr. Sedgwick's death in 1923, organized the Children's Clinic in Minneapolis. Both of these clinics were large factors in the development of pediatrics in Minnesota.

After Dr. Sedgwick's death, Professor Clemens von Pirquet was elected as his successor. He remained only a short time and the vacancy was filled by Dr. Fred Schlutz, who served until 1930. He was succeeded by Dr. Irvine McQuarrie, who has been full professor and head of the department since. Under Professor McQuarrie, the Department of Pediatrics has progressed at a very rapid rate. He has affiliated the hospitals of Saint Paul and Minneapolis with the University Hospital and Children's Clinic, so he has an immense amount of clinical material for teaching purposes. While the primary function of the department is to teach, the reputation of his department will depend largely upon the research that he has stimulated and has carried through to successful conclusion. One of his larger contributions is the preparation of many of his associates for heads of departments of pediatrics in other universities. The enviable position that the Department of Pediatrics at Minnesota now holds among the leading medical schools in America is due to Professor Irvine McQuarrie. Throughout his years at the University, he has maintained a desirable and enviable relation with the general practitioner.

The men in charge of the Pediatric Department of the Mayo Clinic have made many contributions to the progress of pediatrics. The work was first under the direction of Dr. H. Z. Giffin of the Department of Medicine. He was followed in rapid succession by Drs. Archibald, Rood Taylor, M. G. Peterman, who made authoritative contributions to our knowledge of the convulsive state, and Dr. Henry F. Helmholz. The latter became Professor of Pediatrics at the Mayo Foundation and head of this section at the Mayo Clinic. He has written extensively on experimental and clinical pyelitis. In much of his work, he has had as his associate, Dr. Samuel Amberg, one of the foremost scientists in pediatrics. The head of the department is now Dr. R. L. J. Kennedy, a Minnesota graduate. He has made many valuable clinical contributions on different subjects in pediatrics.

Infant welfare clinics were established in the early part of the century in the three larger cities of the state. The work of these institutions has had a direct relation to the reduction of infant mortality. Interns from various hospitals have served under the direction of pediatricians at these clinics with excellent results.

The surgery in infants and children has made vast strides in the last two decades. Many congenital anomalies, formerly resulting in certain death, are often treated successfully in the first days of life. Congenital heart disease with new techniques can now be frequently diagnosed accurately and corrected surgically. Dr. Oswald S. Wyeth of Minneapolis was the first man to limit his practice in surgery to this field. His many contributions and demonstrations in the operating rooms have placed this specialty in pediatrics on a firm foundation in our state. Dr. T. C. Chisholm, during the few years he has been in this field, has also made many contributions and played an important part in the development of pediatric surgery.

Progress in the field of pediatrics during the last decades has been too extensive to discuss in detail. The part that immunization has played in the reduction of contagious diseases is well known. The use of sulfanilamide drugs and later of other antibiotics have proved effective in a large number of infectious diseases. Congenital syphilis is practically eliminated. Childhood tuberculosis is seen rarely. Meningitis of many types is now susceptible to treatment. Allergic disorders can often be treated with excellent results. Progress in the study of poliomyelitis has been rapid and we are now apparently on the threshold of important new methods of prevention and treatment. The list of diseases that formerly caused the high morbidity and mortality rate of infants and children has been decreased. Many of the more serious diseases have been eliminated through fundamental discoveries relating to the causes of disease and the development of definite therapy. The results of all this is apparent in the report of Dr. Robert Rosenthal on "Infant Mortality in Minnesota," published recently in this magazine. As a great majority of sick infants and children are treated by the general practitioner, it is quite obvious that they, as a group, are familiarizing themselves with the advances and research in pediatrics and the newer techniques of examination and treatment of their patients.

Progress in the field of pediatrics in Minnesota has been intimately related to the ideals, accomplishments, and personalities of many pediatricians. Since the beginning of the Golden Age of Pediatrics in the latter part of the 19th century, no branch of medicine parallels this movement aimed at finding some of the answers to the problems relating to the cause of disease and the better distribution of new methods and medical knowledge.

AVERAGE PHYSICIAN WRITES 2,500 PRESCRIPTIONS A YEAR

The average physician in private practice today writes 2,517 prescriptions a year, or one for every three patients.

This is revealed in the March issue of *Medical Economics*. The magazine is publishing the results of a nationwide survey of medical practice, based on a questionnaire sent to each of its 134,000 physician readers.

The survey suggests that the amount of prescribing a doctor does may be substantially influenced by the length of time he has been in practice. At any rate, the young doctor (one with less than ten years' experience) tends to write about 70 per cent more prescriptions a year than the medical man with thirty or more years' experience—even though both men treat about the same number of patients.

The following table breaks down physicians' prescribing habits by community size:

Community Size	*Prescriptions Yearly by Average M.D.*
Under 5,000	2,824
5,000-49,999	2,948
50,000-499,999	2,508
1,000,000 and over	1,848

Medical Economics also investigated the extent of dispensing by physicians. It found that 45 per cent of the doctors surveyed dispense some or all of the medicines they tell patients to take; these dispensing physicians dispense, in the aggregate, 35 per cent of all the drugs they prescribe.

MODERN OTOLARYNGOLOGY AS A SPECIALTY

LAWRENCE R. BOIES, M.D.
Minneapolis, Minnesota

PROBABLY there is no specialty that has undergone so much change because of modern progress in the control of infection as has the specialty of otolaryngology. This change has occurred in the past fifteen years. Prior to that time, the complications of infection in the upper respiratory tract were almost constant problems of the otolaryngologist, particularly in the winter and spring months. Today, acute mastoiditis needing surgery, phlebitis or thrombosis of the lateral sinus, meningitis or brain abscess from ear or sinus infections, osteomyelitis of the frontal bone, or of the maxilla, the peritonsillar and pharyngeal abscess formations, and obstructive laryngitis are relatively uncommon and in some places rare in occurrence.

In spite of this change, chronic infections of the middle ear and mastoid are still seen in considerable quantity. One of the reasons for this is the fact that chronic inflammation in this structure is not necessarily dependent upon an acute process as a precursor, but rather upon the type of mucosal lining involved. When there is a poor pneumatization of the temporal bone either through hereditary factors or neonatal infections, this mucosa tends to be hyperplastic and poorly resistant to infection. In this circumstance an infection reaching the middle ear may be destined to chronicity from its beginning.

Another factor in the development of chronic infection in the temporal bone seems to be the current use of antibiotic therapy without consideration for drainage when secretion has formed in the middle ear and mastoid.

Though these changes in the incidence of complications of infection in the upper respiratory tract have occurred, the specialty of otolaryngology has through new advances developed so many activities that it is difficult for anyone to be entirely competent in all phases of the specialty. This will be apparent if one examines in detail some of the modern activities in otology, rhinology and maxillofacial conditions, laryngology, and broncho-esophagology.

Otology

Surgery on the temporal bone is now performed with much greater skill than it was a decade or two ago. Probably there is no more exacting surgery in any field of medical practice than the fenestration operation for clinical otosclerosis. It was through the development of this operation that temporal bone surgery improved. The otolaryngologist who equips himself to do this work usually finds a broad opportunity to apply the fundamentals of this technique in the surgery of otosclerosis, to chronic suppurations, and to the less common conditions such as atresia of the external auditory canal and in certain cases of endolymphatic hydrops, when surgery is indicated.

There is, of course, a large field of activity in otology that is not surgical. In spite of marked improvement in the control of the acute infections that contribute to hearing loss, the total incidence of this impairment seemingly has not diminished. Probably this is because the incidence from some of the causes has increased in modern times. One is the hearing loss due to acoustic trauma in the form of industrial noise. Also, it seems that the incidence of hearing loss due to a serous otitis media may be more common than formerly. This condition may be caused by an acute interference with ventilation of the middle ear from tubal closure. This results in a transudation of serum. Or, an exudate develops in the middle ear as the result of inflammation or allergic phenomena. Unrecognized and untreated, fibrosis and adhesive processes develop in the mucosa. This may contribute to a permanent loss of hearing of a moderate degree.

Some of this apparent increase in the incidence of hearing loss may be due to the fact that modern methods of testing and the widened use of these tests have revealed more instances of hearing impairment. The audiometer is now widely used for screening tests in schools and as a part of pre-employment physical examinations.

The application and interpretation of modern clinical tests for hearing, and the rehabilitation of those whose hearing loss cannot be helped by medical or surgical means constitutes in itself a large field of activity. Though a considerable part of this work need not be carried on by a clinician, he must give it direction and some supervision.

In addition, he must assume responsibility in advising preventive measures to lessen the incidence of some causes of perception deafness.

A new insight into inner ear problems has developed in the last decade. Vertigo, tinnitus and perceptive loss are common symptoms and seem to be on the increase. In many instances, these symptoms can be interpreted in terms of neurovascular phenomena. This has opened up a fascinating field of inquiry and emphasized to the otologist the importance of a broad knowledge of fundamental physiology.

Rhinology

The fact that acute infections of the upper respiratory tract caused by pyogenic organisms can now be so well controlled means that the modern rhinologist is not confronted with as much suppuration in the nasal space as he was a decade or two ago. Nevertheless, symptoms related to the nasal space are still very prevalent and probably as common as ever. Head pain, congestive states and hypersecretion in the nasal space are daily problems to the rhinologist. Some instances of these symptoms result in some degree from the stress and strains of modern living. Neurovascular phenomena as a factor in head pain and congestive states not dependent on inflammatory processes have been clarified through the work of numerous investigators. The modern rhinologist interprets the vasomotor changes occurring in the nose as the result of allergic phenomena, or as the result of one or more of a variety of human experiences much more accurately than was the case when his training was focused on surgical opportunities.

This does not mean that there is no place for rhinologic surgery. Nasal injury from trauma has certainly not decreased. Skill in the correction of deformities of the external nose and particularly in the deformities of the dislocated nasal septum has increased. The rhinologist who is trained in the fundamentals of plastic surgery and who has a knowledge of and experience in the management of defects in nasal respiration is ideally equipped for the management of these abnormalities. Likewise, this is true of maxillo-facial injury.

There are conditions in the nasal sinuses requiring highly developed technical skill in their surgical management. These are such conditions as the subacute or chronic antrum infection requiring an intranasal antrostomy, the ethmoid state in which exenteration for chronic infection or polyposis is advisable, certain chronic sphenoid or frontal sinus suppurations, osteomas, mucoceles, and malignant disease in various parts of the nasal space.

Laryngology and Broncho-esophagology

The "throat" is the domain of the trained otolaryngologist by right of technical skill and experience in managing the numerous disorders creating symptoms in this area. Here the most common activity from the standpoint of incidence is tonsil and adenoid surgery. Historical accounts indicate that the surgical treatment of the tonsil dates back nearly 3,000 years, yet this subject is controversial today. Two facts probably account for the differences of opinion. The first is that the removal of tonsils and adenoids is often recommended from superficial observation. Secondly, it is considered to be a minor operation and for that reason is undertaken by those who have not acquired skill and training in working in this area. This could account for the fact that in terms of end results, this surgery may not produce the benefits expected, that it is often inadequately done, that the morbidity associated with the operation may be quite significant and that even mortality occurs. The most difficult part of this surgery may be the management of the lymphoid tissue of the nasopharynx in children where particular attention must be paid to the lymphoid folds laterally that obstruct the choanae to produce continued mouth breathing even though the central adenoid mass is removed, or contribute to middle ear disease through blockage at the Eustachian orifices.

Though the modern laryngologist sees relatively few of the abscess formations that once were common in the throat and rarely encounters luetic or tuberculous conditions in an ordinary practice, the incidence of patients who complain of throat symptoms seems to be on the increase. This means that the skilled laryngologist must possess a broad understanding of the various phenomena that might produce vague throat symptoms without local objective evidence of disease, as well as an ability to detect the early changes in malignant disease. He must possess a knowledge of psychosomatic possibilities and the symptoms associated with the tensions of modern living, the phobias that can easily develop through the propaganda for the early detection of cancer, and the neurovascular phenomena producing pain along vascular pathways. No one is better equipped for this than the laryngologist who in training and experience can use the instruments for a complete visualization of the pharynx in both its upper and lower extents, and correctly interpret his findings.

The incidence of laryngeal neoplasms has certainly not decreased. Benign tumefactions of the vocal cords are common and if skillfully handled result in the restoration and preservation of a good voice. Malignant lesions can now be eradicated in a high percentage of cases with good conservation of function. Even when a total removal of the larynx is necessary, the modern developments in speech following laryngectomy offer satisfactory means of communication.

In advanced cases of carcinoma involving the larynx and lower pharynx many lives can be salvaged because modern anesthesia and supportive care, plus new surgical skills, have made a radical removal of these extensive malignant lesions possible.

The modernly trained otolaryngologist is equipped to treat practically all the soft tissue conditions in the neck, exclusive of the thyroid gland. The latter is not included in most training programs even though the more formidable undertaking of total laryngectomy with neck dissection is, and in this procedure the thyroid gland has to be handled surgically as well as in certain cases in which a tracheotomy is performed.

An arytenoidectomy for relief from the respiratory obstruction in bilateral vocal cord paralysis is one of the advances of modern laryngology. The operation is a relatively minor one; an adequate air way can be provided with preservation of a useful voice.

Obstructive laryngitis seems to be less common today than before the advent of the sulfonamides or antibiotics. The employment of these drugs in the environment of high humidity in a controlled temperature has lessened the need for relief in the form of tracheotomy. Often, however, the diagnostic interpretation of an examination by a trained laryngologist is highly important.

Education seems to be lessening the incidence of foreign bodies in the air and food passages, and the skills of the experienced broncho-esophagologist have decreased the seriousness of these accidents. However, the diagnostic procedures related to endoscopy in suspected pulmonary or esophageal disease are more commonly employed. Accurate bronchography, the visualization of obscure lesions through telescopic lens inserted through the bronchoscope, and the early detection of malignant disease are accomplishments of modern broncho-esophagology.

In spite of the progress that has been made, otolaryngology has many unsolved problems. In this challenge there is an appeal. Researches by Minnesota otolaryngologists have made a solid impact on the trend of this specialty. Notable among these have been the contributions of Anderson Hilding, Jerome A. Hilger and Henry L. Williams.

ORGANIZED MEDICINE IN MINNESOTA

(Continued from Page 331)

accord with the practice of a number of forward-looking state associations and large county societies all over the country that were engaging trained lay secretaries to carry on their work.

Today, the Minnesota State Medical Association stands, at its centenary, in a position of organized strength and power which could hardly have been dreamed of on that July morning in 1853.

But the objectives of that hardy handful of pioneers, as expressed in the first constitution adopted that day, do not differ greatly in expression or content from the objectives of the doctors of Minnesota in 1953.

They read as follows:

> "To advance medical knowledge, to elevate professional character, to protect the interests of its members, to extend the bounds of medical science, to protect all measures adopted to the relief of the suffering and to improve the health and protect the lives of the community."

OPHTHALMOLOGY IN THE PAST CENTURY

ERLING W. HANSEN, M.D.
Minneapolis, Minnesota

THE PAST CENTURY has seen the development of medicine and surgery to a very high degree. Ophthalmology has shared in this general advance in pathology and bacteriology, biochemistry, anesthesia, and roentgenology and other diagnostic aids, therapeutics and surgical techniques. Even during the professional lifetime of some of us, there have been such great changes as to seem as incredible to recent graduates as the fact that we had no automobiles, aeroplanes, radio, or movies in our early days.

Just over one hundred years ago, 1851, Hermann Ludwig von Helmholtz described his "eye mirror," the great grandsire of our ophthalmoscope. This relatively crude instrument of silvered mirrors, with which light was reflected into the eye from candle and gaslight, gave the inventor and fellow ophthalmologists an opportunity of seeing the eye grounds and studying the changes therein. After Edison, the light source became the electric bulb until every medical student is familiar now with the modern instrument with its self-containing light. It is probably true that the development of the ophthalmoscope was one of the greatest advances in ophthalmology.

During this period there have been a number of additions to the armamentarium of the ophthalmologist which have greatly aided in the study of eye diseases. Among these is the perimeter of Foerster in 1868 and the tangent screen, which Albrecht Von Graefe made on wood in 1855, followed by Bjerrum's cloth screen in 1889. As the ophthalmoscope had made possible the detailed study of the posterior portion of the eye, so the combination of corneal microscope introduced by Abbe in 1881 and the slit-lamp of Gullstrand, 1911, has given the opportunity for study of minute details of the cornea, anterior chamber, lens, and anterior vitreous. A further more recent development of the contact lens, as well as the Allen prism, has made visualization of the angle of the anterior chamber possible, very important in the problem of glaucoma.

While there had been much knowledge accumulated in respect to physiologic optics during the preceding centuries, it is probably safe to say that the period of accurate refractions of the eye had its real start with the advent of the ophthalmoscope. The first measurement of refractive errors with this instrument is credited to Edward Von Jaeger in 1855, followed by Bomans skiascope in 1859. Our retinoscope, one of the most important instruments in accurate refraction, stems from this "shadow test" study. The test charts for visual acuity in general use today are those of Snellen, introduced in 1862. The near vision test card is that of Jaeger from 1867. Donders published his epoch-making book, "The Refraction and Accommodation of the Eye" in 1864 and Helmholtz's "Textbook of Physiologic Optics" in 1856-1867. The trial-case of lenses was invented by Fromuller just before this era, 1843, but it was many years before ophthalmologists, as such, had trial cases, or for that matter, did many refractions. This was largely a matter left to opticians. In this country we owe much to Edward Jackson, for his interest and teachings in refraction as well as other phases of ophthalmology.

The problems of ocular motility as well as those of refraction were not well understood even in the days of Von Helmholtz and Von Graefe. Javal, in 1868, was responsible for the beginnings of our present concept of anomalies of ocular movements. Among others are Claude Worth and Maddox in England, Stevens, Savage, Duane, and Lancaster in this country, and more recently, Bielschowsky who came to America after working in Breslau for some years. The causes and correction of strabismus and motor anomalies are being given a large place at the present time in ophthalmological discussions.

It is during this period of time that a fuller knowledge of gross and microscopic anatomy of the eye has constantly been attained and with this naturally a better understanding of pathological processes. In connection with the latter, the name of Ernst Fuchs, of Vienna, at whose feet some of us have had the privilege of sitting, probably should head the list. In England there was Sir John Parsons and Treacher Collins. If we were to pick one man above all others in this country it would have to be F. H. Verhoeff of Boston. There are a great many younger men, and for the sake of accuracy, women, who are furthering this valuable work. It should be recorded also that while, until recently, few ophthalmologists were conversant with the subject of histopathology, the graduate student in our field has been, in the recent past, gaining a very good working knowledge of it.

If an attempt were made to any more than catalogue the tremendous change in the etiological status of eye diseases, there obviously would not be space in a paper of this kind. What it meant may be quickly gathered by a very few dates—the discovery of the gonococcus of Neisser, 1879; staphylococcus, Ogston, 1881; tubercle bacillus, Koch, 1882; pneumococcus, Friedlander, and Klebs-Loffler bacillus, both in 1883; tetanus bacillus, Nicolaier, and the streptococcus, Rosenbach in 1884; and the spirochete of syphilis in 1905. If the increased knowledge in bacteriology and virology since that time were added, we would surely have a large volume.

Some of the above-mentioned organisms have been the cause of many of our severest eye lesions and the most destructive of sight. One of the leading causes of blindness in children was for many years, interstitial or parenchymatous keratitis. Jonathan Hutchinson, in 1858, showed that condition was one of the stigmata of congenital syphilis, along with notched teeth, and nerve deafness (Hutchinson's triad.) In recent years, where pre-natal treatment of syphilitic mothers has been in effect, especially in the first trimester, the incidence has dropped to almost nothing. In our state, it is very evident in the Faribault school, where it has dropped from a high to a low percentage of the blind or visually handicapped.

Another severe and blinding disease, responsible for many children in special schools, was ophthalmia neonatorum, gonorrheal ophthalmitis. In 1881, Crede introduced the method of prophylaxis known by his name, i.e., the instillation of silver nitrate in the eyes immediately after birth. The incidence dropped in all places where it was used from about 10 per cent to less than 0.5 per cent. Since the advent of penicillin there has been a sustained effort on the part of some to substitute this antibiotic for the 1 per cent silver nitrate solution now mandatory. There has been hesitation in adopting this change with the proven effectiveness of the silver solution. In the few instances in which infection develops, constant improvement in therapy has effectively saved eyes when treated.

Trachoma, which is considered among the viral diseases, is endemic in some countries, particularly Egypt and the near East. Its ravages have been known since earliest times, and have been of such great importance that international organizations have been at work during this century on the study of the disease and its amelioration. The first hopeful reports on treatment have come since the introduction of the sulfonamides.

It is sad to report that with the increasing knowledge of general medicine and with the constant addition of life-saving and life-prolonging measures, in some conditions there is an inverse ratio of visual health. One of the conditions is diabetes. In the younger diabetics, who have survived with the help of insulin, we are seeing more and severer retinopathies, going on in many cases to massive vitreous hemorrhage, retinitis proliferans, retinal detachment and blindness. With older people, too, the disturbances in the retina occurring with diabetes and in combination with hypertension is bringing about much visual loss. There has probably been also an increase in senile macular degeneration with the increase in longevity. Cataract of the senile type and glaucoma obviously would also show an increased incidence.

Another unfortunate condition causing blindness in children has appeared in about 12 per cent of the premature infants who are being saved. This condition, first described by Terry in 1932, and called by him retrolental fibroplasia occurs in greater numbers of prematures whose birth weight is under three pounds, decreasing proportionately as full term is reached, and is not seen in full-term babies. The pathology is now very well known, the end result being a complete detachment of the retina, which becomes incorporated in a fibrotic mass seen behind the crystalline lens. To date no influences in pre-natal or post-natal life can be said to be responsible for the development, the only definite factor being that of prematurity. This has meant that while there has been a decrease in special schools of children with poor vision or blindness from interstitial keratitis and ophthalmia neonatorum, their places are being taken by these unfortunates.

One of the more serious problems of ophthalmology is glaucoma, not a disease entity but a symptom complex. The condition of hardness of the eyeball had long been known, but its nature was not established until after the development of the ophthalmoscope, followed by the perimeter and tangent screne. Measurement of the intraocular tension by means of the tonometer was made by various observers and instruments devised for this purpose. The ones in most common use today are products of the Twentieth century, those of the original Schiotz instrument or its modification by Gradle, and the McClean.

The important thing in glaucoma is its early recognition and relief of the increased intraocular tension. Pilocarpine and physotigmine or eserin were not isolated until the fourth quarter of the last century. It is only in the present century that medical treatment of glaucoma has had any degree of success. In recent years there have been a number of new products developed, which are useful in certain cases, but as yet pilocarpine is probably the one best drug available. The surgical treatment began with iridectomy, which was first done for this condition by Von Graefe in 1855. This method is still effective in a large percentage of cases of acute congestive glaucoma. In 1867, DeWecker proposed doing a sclerectomy, to produce a permanent fistula from the anterior chamber now commonly called the La Grange operation. This has been the underlying principle of all operations since, to produce such a filtering cicatrix. The two most widely used have been the corneo-scleral trephine of Elliot and the iridencleisis or iris inclusion operation of Holth, both developments of this century. As before mentioned, gonioscopy has made possible, in recent years, a view of the angle of the anterior chamber, a great aid in diagnosis, and in the selection of proper treatment. It has also brought about a revival of interest in congenital and juvenile glaucoma and their treatment by goniotomy.

Of the inflammatory diseases of the inner eye, iritis, irido-cyclitis, or generalized uveitis hold an important place. Space will not permit details of the changes that have taken place in our day in the ideas concerning the etiology and treatment of this oftentimes severe condition. In the textbooks of the early part of the century, syphilis was given as the chief cause of iritis. We now divide the disease into non-granulomatous and granulomatous iritis. The list of workers who have investigated the production of this disease experimentally is very large. We owe a large part of our knowledge to the development of the studies of immunity and allergy. Atropine had been used in treatment more than a hundred years ago, and is still an integral part of treatment. Fever therapy, with foreign protein injections, for a number of years, has been a valuable adjunct. Cortisone and ACTH have been of great value in controlling inflammations in certain types of iritis, but ophthalmology has experienced also some of the disappointments which other fields of medicine have had with these hormonal substances.

Ophthalmic surgery, as well as surgery in general, was given great impetus by two developments in the nineteenth century. Shortly before the period under consideration, general anesthesia had been introduced. Prior to this time eye surgery had been done without anesthetics or under some influence of opium or alcohol. It may be possible that the rather general popular idea of pain in cataract surgery has been carried down from that period. The other was the antisepsis of Lord Lister which led to our modern asepsis. A further aid to eye surgery was the introduction of the use of cocaine as a local anesthetic by Carl Koller, an American working in Vienna in 1884. For many years this was the only anesthetic that was used in cataract surgery, and those of us who were doing these operations twenty-five or thirty years ago used topical instillations of 4 per cent cocaine with satisfaction. Other local anesthetics have largely supplanted the use of cocaine. The advent of procaine was another milestone and is much used for infiltration anesthesia, particularly in retrobulbar injections in intraocular surgery. Adrenalin used in connection with anesthesia, was isolated by Takamine in 1900, just as we turned the corner into the present century.

The most commonly performed intraocular operation is that for senile cataract. Naturally this condition had always been observed and from very early times the pupil had been cleared of this "inspissated humor" by couching or pushing it back into the vitreous. This is mentioned because even after the first cataract extraction, generally credited to Daviel in France in 1747, one hundred years of controversy as to the operation of choice took place. It, therefore, brings the era of common acceptance of extraction of the lens to the last hundred years. The early incisions were made in the cornea and it was again

Albrecht Von Graefe who first introduced the linear incision at the limbus. His narrow-bladed knife, the Graefe knife, is still in use today. With many operations, the section is no longer made with the straight knife, the original incision being made with the keratome and enlarged with special scissors to the desired length. Two principle changes have been made in the cataract operation during the past quarter century. The first is the use of corneal or corneo-scleral sutures which are preplaced before opening the eye and tied on removal of the cataract. The second is the extraction of the lens in the capsule, which may be grasped by a toothless forcep or by means of a suction cup. Both of these procedures, in competent hands, have added much to the successful outcome of the operation.

One other surgical development must be added, that for retinal detachment. Various attempts had been made to reattach a separated retina with somewhat indifferent success and most cases of detachment were doomed to loss of sight in the affected eye. At the International Congress of Ophthalhology in Amsterdam in 1929, Gonin reported his operation of "ignipunctur" or electrocoagulation. Diathermy coagulation is now generally done, the principle being the production of multiple spots of irritation which in the process of healing re-cement the detached retina, and close the hole or tear usually present in the retina.

These examples will suffice to show the remarkable changes that have taken place. Mention should be made of the electromagnet for removal of intraocular foreign bodies of steel or iron. The camera for fundus photography has also been developed as an aid in following the progress of a case, and as an aid in teaching. The new developments in chemotherapy and antibiotics are too well known to require elaboration.

This account should not be closed until the great changes in the matter of education and training in ophthalmology have been recounted. It can readily be seen that almost all of the new instruments, the discoveries in basic sciences, the development of new techniques mentioned in this paper came from Europe. There have been many improvements by Americans in recent years. Living ophthalmologists in this country have scarcely been mentioned in this paper. History will take care of them. When the next hundred years is recorded, perhaps American names will lead all others.

Not so long ago men in this country, desiring to specialize in this field, worked with someone who was already in it, or made visits to the larger cities where clinics were established. Many spent time in London and Berlin, a few in Paris, but most went to Vienna. In the middle of the last century and indeed much later many men known as ophthalmologists also did general work. There was a long era, which continues somewhat even today, when a combination of eye, ear, nose, and throat practice prevailed. We are nearly at the end of that period, with training being given in ophthalmology or in otolaryngology. Actually there is more reason for ophthalmology and neurology to be combined than ophthalmology and otolaryngology.

The training of men in ophthalmology today is done mostly in three-year fellowships, as at Minnesota, or in one year spent in basic courses in instruction in certain medical schools, followed by two years of residency in approved hospitals. In addition to the work done by the American Medical Association, the Hospital Associations and the American College of Surgeons in the general improvement of medical schools and hospitals, the American Board of Ophthalmology has been a tremendous factor in the improvement of training in this specialty. This was the first of the specialty examining boards, organized jointly by the Section on Ophthalmology of the American Medical Association, the American Ophthalmological Society and the American Academy of Ophthalmology and Otolaryngology. Dr. Edward Jackson it was who fathered this idea and was the board's first chairman in 1916.

So, with improved tools, with ever-widening knowledge, with greatly improved training of young men, ophthalmology looks back on a hundred years of greater achievement than in all the centuries that had gone before, and forward to a bright future.

References

American Encyclopedia of Ophthalmology. Cleveland Press, 1918.

Masters, R. J.: The future of ophthalmology. Section on Ophthalmology, AMA, 11:27, 1951.

Verhoef, F. H.: American ophthalmology during the past century. Section on Ophthalmology, AMA, 35:50, 1947.

DERMATOLOGY IN THE FIRST CENTURY OF MEDICINE IN MINNESOTA

HENRY E. MICHELSON, M.D.
Minneapolis, Minnesota
FRANCIS W. LYNCH, M.D.
Saint Paul, Minnesota

LITTLE can be said of Minnesota dermatology before 1875. That there was little of dermatologic note in the United States is shown by Pusey in his general "History of Dermatology" where he lists only two major American items prior to 1850 and notes that the stirrings of "modern dematology" in Europe between 1850 and 1875 influenced only a handful of Americans as individuals. In Minnesota, except for clinical teaching at the several Medical Schools the story continued to be that of individuals until after 1915. The nature of early dermatologic practice in Minnesota seems not to have differed essentially from that elsewhere, though it is of some interest to note that there were some cases of leprosy among Scandinavian settlers, in number sufficient to attract the attention of the noted Norwegian dermatologist, Carl William Boeck, on a visit in 1869-70 to Minnesota and several adjoining states. Probably due to climatic and hygienic conditions the disease subsequently disappeared from the state.

Several early dermatologists deserve individual consideration. Two Saint Paul physicians were among the earliest members of the American Dermatological Association, yet they can hardly be regarded as dermatologists or even as contributors to Minnesota dermatology; in fact, it is not clear why either of them desired membership in that organization. The death of one, Harry C. Hand (1848-1876), was recorded in the first transactions of the Association. The other, Daniel W. Hand (1834-1889), was an outstanding, able, and highly regarded physician of wide interests and activities but it is not known that he contributed directly to dermatology here or elsewhere, though he was the first president of Ramsey County Medical Society and also the first president of the State Board of Health.

Minnesota dermatology was early favored by the attention of a little-remembered, but active and peripatetic figure, LeGrand N. Denslow (1852-19??). He had already practiced his specialty from 1880 in New York City as a member of the New York Dermatological Society and was a recently elected member of the American Dermatological Association before his short period of practice in Minneapolis. He moved to Saint Paul in 1885 where he was Professor of Genitourinary Surgery and Venereal Diseases at the Saint Paul Medical College from 1885 until 1888 when the College was absorbed by the Medical School of the University. Denslow left Saint Paul about 1890 and subsequently practiced dermatology in Los Angeles (about 1893) and then returned to New York City until at least 1908. Then, or during his previous sojourn, he was active in the Outpatient Department of Bellevue Hospital. Working in 1909 at Charcot's Clinic at the Salpetriere Hospital in Paris, he became interested in a therapeutic technique which he later publicized in a monograph, "A Surgical Treatment of Locomotor Ataxia," (Balliere, Tindall & Cox, London, 1912). Though Denslow visited in New York in 1910 and 1911 he seems to have practiced in London from 1910, with a Harley Street address for a time. If Denslow left few lasting marks in Minnesota, his subsequent course seems of sufficient interest to deserve listing him in this review.

Throughout this early period the dermatologists divided their interests, with considerable attention devoted to genitourinary diseases. Unlike most, Burnside Foster (1861-1919) seems to have been much more interested in dermatology though, of course, treating venereal diseases, a custom which continued for some time. Coming from the East, he established his practice in Minneapolis in 1887 but changed to Saint Paul in 1891, apparently to take over the practice vacated by Denslow's departure. While many modern physicians have dozed in their offices and many others in earlier days slept there at night, Foster may have been unusual in utilizing in Minneapolis a desk which was converted to a bed at night. He was a learned individual, interested in writing and in teaching, acquiring professorial rank in dermatology at the University Medical School (1899) where he lectured for many years on Medical History as well.

Dr. Michelson is Professor and Director of the Division of Dermatology and Dr. Lynch is Clinical Professor in Dermatology at the University of Minnesota.

He was a member of the American Dermatological Association, attended national and international dermatological meetings, wrote numerous papers for local and national journals, and was active editorially in Minnesota. He was the first president of the Minnesota Dermatological Society. Foster and Vander Horck may be regarded as the first who strongly influenced the course of dermatology in Minnesota though the early years of the twentieth century brought many more who expanded and developed dermatologic practice in this region.

The history of a specialty in medicine in a locality is largely a report of the progress of that specialty in the medical school or schools of the area. In Minnesota the state university now has the only medical school. The history of dermatology at the University may be divided into three periods. The first began about 1900 and continued until 1911. At that time Dr. Max Vander Horck was professor of dermatology and genitourinary diseases. He was trained in Vienna and because of a fascinating personality attracted attention to the teaching and practice of dermatology. At that time dermatology was taught by demonstrating patients with dermatologic conditions and by lecturing upon the disease the patient presented. There was no plan of progressive lectures. There was no hospital service, therefore no interns or residents who could be called upon to investigate the patient. Diagnoses were made at sight. Dermatopathology was not available. What assistance Dr. Vander Horck had came from volunteers, such as Franklin R. Wright, John Butler, and S. E. Sweitzer. They were all influenced by Vander Horck and went to Vienna and other European centers to further their knowledge. On their return they practiced dermatology and treated venereal diseases. They also attended the University dispensary where small groups of students were introduced to the morphologic diagnosis of skin diseases.

After Dr. Vander Horck's death, Dr. S. E. Sweitzer was appointed to be in charge of dermatology. He held the rank of associate professor. In addition to the dispensary clinics, Dr. Sweitzer organized an undergraduate teaching schedule. He had the assistance of Drs. John Butler, Harry Irvine, George Olson, and Clifford Boreen, all of whom were practitioners. There were no postgraduate students. When the University Hospital was opened Dr. Sweitzer became the first dermatologic consultant. Dr. Sweitzer was in charge of dermatology for approximately another, or the second, decade of the specialty at the University. About 1920 Dr. Sweitzer was given the opportunity to establish dermatology at the Minneapolis General Hospital, where he developed a large out-patient department and was assigned a certain number of beds in the hospital. The teaching at the University was entrusted to a committee consisting of Drs. Butler and Irvine; this policy continued until the present incumbent, Dr. Henry E. Michelson, was put in charge and in 1925 he was made professor of dermatology. He was a product of training under Dr. Sweitzer and a European sojourn. Dr. Irvine had previously exhibited great interest in the public health aspects of venereal diseases and subsequently spent many years of part-time work in this field at the Minnesota Department of Health.

The history of the specialty at Minnesota is essentially the same as the history of dermatology in America, beginning with the end of World War I to the present time. It may be briefly outlined as follows: Previously there was practically no place in America where a graduate student could receive adequate training in dermatology. Vienna, Paris, Berlin and London offered such instruction. Vienna had the best organized teaching and therefore attracted physicians who wished to take postgraduate training. Dermatology was well established throughout Germany, Austria, and Switzerland by 1910. The founders of dermatology in the various centers had created their particular schools. Successors had ascended to the professorships and the staffs included many assistants and residents. Some of these posts were open to Americans who, if appointed, became indoctrinated and inspired to go beyond the routine lectures. These few visualized transplanting such ideas to America, but on returning they found the medical faculties quite loath to further their lofty plans. The facilities were and still are lacking, and the enthusiastic embryo dermatologist had to indeed have zeal to continue to adhere to his intentions and fight the opposition. This was about the condition of dermatology at the end of World War I. There were many European trained men in the larger cities; most of them had some university connections; most of them had secret plans to build departments if the opportunity presented itself. They depended for their clinical help upon the young men returning from European clinics, but the war had disrupted European teaching. Glorious Vienna was no more the capital of a large empire with royal support. Young men had to turn to their own schools for graduate training. Dermatology, like the other specialties, had been organized for undergraduate teaching. Now it found men pounding at its door for training. The University of Minnesota was in the same position as other similar institutions. It was emerging from the predominantly undergraduate phase to one of combined or continued undergraduate and graduate instruction. Dermatology took its place with the others. Services were established at the University, the Minneapolis General and the Ancker Hospital. Lectures, demonstrations, courses in other departments, were utilized. A framework of graduate instruction was built. The work at the University was parallel to the work at the Mayo foundation. Graduate degrees were granted on fulfillment of the requisites.

When the Board of Dermatology and Syphilology was established, Minnesota was chosen to be one of the accredited schools, having met the requirements.

The history of dermatology in Minnesota has been one of steady, gradual growth. Dr. Michelson has been in charge since 1925. The staff at present has one professor, two clinical professors, two associate clinical professors, two assistant clinical professors and a number of instructors, assistants and residents. Dermatology at the Minneapolis General, Ancker and Veterans' Hospitals are intimately associated with the University in the graduate program.

The dermatologic staff have received recognition. There has been one president of the American Dermatological Association and of the Investigative Society for Dermatology, two chairmen of the Section of Dermatology of the American Medical Association, two members and one president of the American Board of Dermatology, and three presidents of the Chicago Dermatological Society. There have been two corresponding members of the Austrian Dermatologic Society and one honorary member and one corresponding member of the British, Danish, Swedish, Italian, and French Societies. There have been innumerable contributions to dermatologic literature and to society programs. The future of dermatology at the University of Minnesota will undoubtedly keep pace with the general progress of the school.

In much lesser degree has Minnesota dermatology been influenced by two organizations other than the Medical School. Founded in October, 1915, the Minnesota Dermatological Society continues actively with a program of clinical presentations, open discussion and an informal dinner. There were at its initial meeting five from Saint Paul: Armstrong, Cook, Foster, Freeman and Klein; five from Minneapolis: Butler, Olson, Sweitzer, Thomas and Wright; and Linneman from Duluth. The first elected officers were Foster, president, Sweitzer, vice president, and George Olson, secretary. The meetings have alternated between Minneapolis and Saint Paul, with less frequent meetings in Rochester and Duluth. It is among the oldest of America's local dermatological societies. Transactions were published only by several groups in New York City, one in Philadelphia and one in Chicago when the Minnesota Society began such publication in 1916, since when the transactions of the Society have been published regularly in the *Journal of Cutaneous Diseases* and its successor, the *Archives of Dermatology and Syphilology*. Today the organization is of regional stature with active members in Wisconsin, Iowa, Nebraska, the Dakotas and Manitoba.

Most of the early members of the Minnesota Dermatological Society continued practice in the area. The Minneapolis men have already been mentioned. In Saint Paul, John Armstrong was a man with a wide range of interests, including editorial activity, library work, Minnesota history and archery. Teaching activities of Henry ("Nick") Klein and Charles D. Freeman, Sr., were largely confined to work in public clinics in Saint Paul. Freeman was a regular attendant at meetings of the American Dermatological Association, invariably acompanied by Jack Butler, a close friend of many years. Edward T. Gager subsequently joined the Society and practiced in Saint Paul for many years.

In dermatology as in other fields of practice, the Mayo Clinic has exerted a favorable influence in Minnesota. There was no separate dermatologic service at the Clinic prior to 1916 when John H. Stokes arrived to head such a Section. Though he did not directly exert much influence on Minnesota dermatology during his relatively brief stay, he did bring to the Clinic a young associate, Paul A. O'Leary, who succeeded him as Head of the Section and has since been an inte-

(Continued on Page 388)

A HUNDRED YEARS OF PROGRESS IN THE THERAPY OF URINARY INFECTION

WILLIAM F. BRAASCH, M.D.
Rochester, Minnesota

UP TO 100 years ago the therapy of disease in the genitourinary tract consisted largely of treatment for stone in the bladder, stricture of the urethra and venereal disease. In common with other branches of medicine, urology was on the threshold of a new era. The leaven of scientific investigation, which had been slowly maturing, burst forth with one discovery after another which revolutionized the practice of medicine in all its phases.

When the methods of treatment in use a century ago for infection in the urogenital tract are compared with modern methods of treatment, the vast progress that has been made since that time can be realized. Knowledge of such infection 100 years ago was extremely meager. Uroscopy, employed as a method of examination of the urine since the medieval era, was still being used. The modern instruments of diagnosis and the exact methods of study of the urine employed today were then very remote. Use of the microscope in examination of the urine was unknown. Localization of the source of pyuria was largely guesswork. The practitioner of that day might allow the urine to sediment, and thus gain some impression, from its appearance, as to the presence of pyuria. If dysuria was present, the physician of that time probably would have prescribed one of the drugs commonly used for that purpose, such as sodium bicarbonate to alkalinize the urine, spirits of niter or sandalwood oil. If pain was present, he probably would add laudanum or paregoric.

The best-known type of urinary infection at that time was that which occurred secondary to stone in the bladder. By inserting probes through the urethra into the bladder, the physician could ascertain the presence or absence of stones. If stones were present, removal was attempted either by means of crushing with the crude instruments extant or perineal lithotomy.

Theory of Bacterial Infection

Modern concepts of infection began with the discovery of Pasteur that infection is caused by bacterial invasion of the tissues. This discovery also opened the way for the modern therapy of infection. Realization of the value of Pasteur's theories and their application to the therapy of urinary infection by the medical profession was unbelievably slow. For instance, the febrile reaction which often occurred after the passage of unsterile instruments in the urethra was believed to be caused by absorption of decomposing urine, and was referred to by clinicians of that time by the facile French term, *absorption urinaire*. Strangely enough, Pasteur's discovery of bacterial action was not generally accepted by many of his contemporaries. The discovery of the tubercle bacillus by Robert Koch, and its demonstration as the cause of tuberculosis came later. Various followers of both Pasteur and Koch subsequently identified the causative bacteria involved in different types of infection.

The vast work of identifying and classifying the many hundreds of bacteria which cause disease proceeded gradually, but recognition of the bacteria involved in urinary infecton was extremely slow in developing. In fact, it was not until recent years that the distinction of bacteria and adequate methods of treatment were evolved. Nonetheless, even in early years it became evident that elimination of urinary infection depended on a working knowledge of the bacteria involved. Today the urologist readily gives the names of a multitude of bacteria and is familiar with many of their cultural characteristics and microscopic appearance.

The next step to intelligent treatment of urinary infection was the necessity not only for a working knowledge of the bacteria involved, but also for recognition of their individual reactions to the various bactericidal drugs. Even today, it will not avail to dust off and read old textbooks on bacteriology to obtain such information, because knowledge of the subject is constantly being revised. What is required is to consult current literature to bring oneself up to date.

Urologists found that microscopic examinations of dried urinary sediment stained with Gram's stain permitted a practical and fairly accurate method of identification of bacteria. They also

---

Dr. Braasch is an Emeritus Member of the Section of Urology, Mayo Clinic, Rochester, Minnesota.

called attention to the frequent occurrence of two or more different types of bacteria in an instance of urinary infection. This, in turn, called attention to the need of identifying the several organisms present before selection of therapy.

Rise of Rational Drug Therapy

The therapy of urinary infection a century ago was limited and empirical, and it remained so for many years. Pasteur's work, once it came to be accepted, provided the opportunity for scientific investigation of antibacterial drugs. Although progress was extremely slow until recent years, numerous attempts were made with various means to combat the infecting bacteria. Following the example of Koch and his co-workers in the field of tuberculosis, attempts were made to eliminate urinary infection with vaccines, both autogenous and otherwise. Although good results occasionally were reported, such attempts were largely unsuccessful.

Bacteriophage, which had been found to be of some value in combating cholera, also was tried in eliminating urinary infection caused by B. coli. Although some favorable results were reported, the method gradually fell into disuse. A number of chemical preparations administered orally were employed with variable results. Prominent among these should be mentioned hexamethylenamine. This drug was widely used as a urinary antiseptic agent under the trade name of urotropin. Hinman showed that this drug was of little therapeutic value unless the pH of the urine was less than 5. When used with drugs that acidify the urine, hexamethylenamine still is employed in controlling infection with B. coli, since it causes little or no systemic reactions. Several preparations of azo dyes were employed in an effort to combat acute renal infection. Hugh Young advocated the intravenous injection of mercurochrome. In several cases the fever subsided within twenty-four hours after mercurochrome had been injected, and the infection was miraculously controlled. However, in many other cases little or no benefit resulted, and several deaths were reported as following intravenous injection. Other dyes were used for chemotherapy, including acriflavine and gentian violet, with similar results. The intravenous injection of neoarsphenamine in minimal doses eliminated urinary infection with staphylococci in some cases. A great variety of drugs was used for local application to infected areas of the urinary tract by means of lavage and instillation. Among them, solutions of silver nitrate, potassium permanganate, silver protein preparations and mercurochrome were most frequently employed for urethral instillation and lavage of the bladder and the renal pelvis.

One of the notable attempts to control bacillary infection was made by Nielson, a Swedish scientist, who found that acidification of the urine to a pH of less than 5 would eliminate colon bacilli. However, it proved to be difficult to maintain a lethal acidity of the urine by oral medication. About this time Helmholz noticed that a glass of urine which had been standing in the laboratory for five days remained clear. He found that it belonged to a patient being treated for epilepsy by means of a ketogenic diet. It was evident that the urine produced after a ketogenic diet contained elements which were bactericidal. Clark thought that the sterilizing element in such urine was largely that of acidification, and found that the diet eliminated bacilluria in a series of patients who had urinary infection. Later, Fuller showed that the important bactericidal element in ketonuria was an end product of fat metabolism, namely, beta-hydroxybutyric. However, many patients found the ketogenic diet very objectionable, particularly when continued over a period of several weeks. Fortunately, about this time, Rosenthal discovered that mandelic acid, when excreted in the urine, would eliminate bacilluria. The ketogenic diet was rapidly displaced by the use of mandelic acid, which was widely employed in a synthetic form. After a few years, however, this drug in turn was supplanted by the sulfonamide and antibiotic drugs.

The therapy of urinary infection as employed today had its inception in the brilliant research of Domagk, eighteen years ago. He was first to discover a drug which when absorbed caused a bactericidal reaction in the tissue cells. His first sulfonamide drug, called prontosil, initiated the development of a series of drugs which revolutionized the therapy of infections. The group of sulfonamide drugs multiplied rapidly, so that today there is a wide choice of those which have specific action in urinary infection. These drugs in turn, in recent years, have been succeeded by the development of antibiotic drugs, so widely employed today.

It has been said that there is a drug for every bug. While this is not strictly true, there are specific antibiotic agents and sulfonamide drugs for the various bacteria involved in urinary infection. Intelligent use of these agents requires a careful study and a thorough knowledge of bacteriology as well as of the varying reactions on the part of bacteria to the different drugs employed. It must be remembered, moreover, that all of these agents are most efficacious when the infection is largely superficial, when there is no extensive cicatricial change in the renal tissues and when there is no obstruction to drainage of urine.

Fancy might lead one to visualize the treatment of infection in the future. It might be wondered whether the therapy employed 100 years from now will cause the status of therapy of today to appear as primitive as that employed a century ago.

Renal Tuberculosis

The modern conception of renal tuberculosis, as well as treatment of the disease, had its origin with the discovery of the tubercle bacillus by Robert Koch. The attempts made by him and his followers to overcome pulmonary tuberculosis by means of vaccine also were applied to renal tuberculosis. Similarly, there was no success. It took many years after the first successful nephrectomy by Simon in 1869, before attempts were made to remove the kidney because of tuberculosis. In the meantime, it had been discovered that the diagnosis of renal tuberculosis could be made by detection of the tubercle bacillus in the sedimented urine and, later, by cystoscopy. The mortality rate associated with nephrectomy was gradually reduced from 50 to 2 per cent. The methods of treating the infected ureter varied from ureterectomy, partial or complete, to injecting it with phenol. It also came to be realized that the auxiliary treatment of rest and adequate nutrition were of value in the attack on renal tuberculosis. No method of chemotherapy which was tried proved to be of any value until recent years, when it was found that streptomycin deters the growth of Mycobacterium tuberculosis. This particular development has presented some basis for hope in the chemotherapeutic elimination of tuberculosis in all its forms.

Gonorrhea

Gonorrhea was known to the ancients. It has plagued humanity over the centuries. For ages the bacterial nature of this disease was unknown, and as a consequence of absence of such knowledge, treatment defied the theories of all physicians and savants. It may be said that the modern conception of gonorrhea began in 1879, when Neisser demonstrated that the coccus which bears his name is the cause of gonorrhea. Even with this knowledge at hand, treatment of the disease remained unsatisfactory, and was the subject of wide controversy for several years. Although lavage of the urethra with potassium permanganate, silver protein preparations and solutions of silver nitrate often relieved the symptoms, it did not eliminate the infection. A curious therapeutic development arose when Carpenter and his colleagues discovered that the gonococcus succumbs when subjected to a temperature of 106° F. Cabinets were constructed in which patients could be subjected to a temperature of 106° to 107° F. for several hours. Desjardins and his colleagues reported on a series of patients treated in fever cabinets, from whom the gonococcus was completely eliminated. This meant that, although the treatment was heroic, it was the first that could completely eliminate gonococcic infection which had defied all previous efforts for centuries. Shortly after the introduction of fever therapy, it was shown that the sulfonamides could accomplish the same thing. These drugs in turn were soon succeeded by antibiotic agents, which are being employed so widely today.

Within a few years a simple and successful treatment of gonorrhea has been found. The entire clinical picture of this disease has been revolutionized. Many complications of chronic urethritis which plagued the urologist over the years have vanished like magic, and bid fair to be relegated to the past. As successful elimination of the gonococcus has been attained, many of the social complications, as well as most of our previous concepts, of the disease have gone. With the recent development of so-called one-shot methods of the administration of antibiotic agents, the incidence of stricture of the urethra, which plagued men over the centuries and once seemed to support the urologist in his practice, now promises to become scarce, if indeed not eliminated. In fact, it looks as if the future urologist will face a strictureless world.

(Continued on Page 386)

MINNESOTA OBSTETRICS
1853-1953

WILLIAM P. SADLER, M.D.
Minneapolis, Minnesota

THIS YEAR marks the hundreth anniversary of the Minnesota State Medical Association and it has become the writer's privilege to give a historic sketch of obstetric progress in our state during the past century.

The Minnesota Territorial Medical Society held its first meeting on July 23, 1853. Like some newborns, the society had a faltering start. Few meetings were held. Reorganization was attempted in 1856. It was not until 1869, following the turbulent civil war period, that the State Medical Society as we know it today, was reorganized.

Our Minnesota State University opened in 1851. Professor E. W. Merrill was its head. Twenty students were enrolled. The University was discontinued in 1855. It reopened in 1867. William Watts Folwell was its first president. The University's early years were fraught with many difficulties. After the civil war, its one building was found occupied by a squatter. Turkeys and cordwood were housed in different rooms. Its basement was badly damaged by wood chopping.

It is a far cry from the University's turkey roosting days and enrollment of seventy-two students in 1867 to the vast acreage, enormous physical plant, and teeming thousands of enrollees today.

The story of medical and obstetrical progress over the century is largely the influence of the University on medical education. Our great University has been the lode star in our attainments. Its greatest gifts have been not what the students were offered in fine buildings and equipment, nor in didactically imparted knowledge of facts. The influence it exerted in the development of character and native ability in its students has been worth more than all else put together. Dr. Jennings C. Litzenberg's greatest of many accomplishments in Obstetrics and Gynecology, as head of the department (1913-1938), was his influence on the development of these traits in his students.

Obstetrics is that branch of medicine which deals with parturition and its sequels. Its chief aim is that every pregnancy ends with a healthy mother and child. Obstetric care strives to reduce discomfort and to leave mother and child physically and mentally sound.

The earliest obstetricians were women and priests. For thirteen centuries the physicians of Europe were not allowed to attend normal cases of delivery. In the seventeenth century they began to participate to some extent. Obstetrics was not a man's profession in America until the middle of the nineteenth century. Our story of Minnesota Obstetric progress begins at this time.

In the last century Minnesota's physicians printed cards in the newspapers indicating their availability for "complicated obstetric cases." Many of the midwives in our pioneer days had been trained in good schools of midwifery in Holland, Germany and the Scandinavian countries.

Preventitive obstetric medicine is considered an American contribution to the widespread introduction of prenatal care. Much credit is given John William Ballantyne, a University of Edinburgh graduate in 1883 for his advocacy of antenatal care. In our country it was conceived in 1901 by the Boston nursing profession and received great impetus in 1912 by Robert deNormandie.

Dr. Mary Jackson Whitney practiced in Rochester, Minnesota, during the years 1879 and 1880, three years before Ballantyne's graduation. Her card published in a Rochester paper of the day read:

> "Ladies if you intend to secure services of Dr. Whitney during your confinement, engage her at your earliest convenience. Twenty years' experience as midwife causes her to prefer visiting her patients before the event as well as after, in order to render the occasion comfortable and safe. Her subsequent visits are to insure as far as possible perfect health combined with an elegant figure. No extra charge for advice."

Dr. Whitney's advocacy of prenatal care in Minnesota antedated by many years, the famed Ballentyne's teachings, deNormandie and the Instructive Nursing Association of Boston.

Obstetrics reached its full dignity as a special-

Dr. Sadler is Chief, Department of Obstetrics and Gynecology, Minneapolis General Hospital.

ty in the early twentieth century. Midwives did not give up their place in the field without a struggle.

In the sixteenth century, Dr. Wertt of Hamburg realized the study of the birth process should be at an actual labor. He disguised himself as a woman in order to be admitted to the lying-in-room and attended confinements in his district. Upon discovery of his masquerade, his punishment was swift. He was burned at the stake in 1522 as a lesson to watching physicians that midwifery was a woman's art. In our early colonial days, articles denouncing the fashion of having men midwives appeared in newspapers of the time.

Minnesota's obstetric progress during the century is highlighted by its contribution to medical education, lowering of maternal mortality, early entry into preventitive obstetric medicine by widespread prenatal care and by contributions to reduction of stillbirths and neonatal deaths.

Medical Education

As a result of the Flexner report in 1910, Dr. Vincent, president of the University, reorganized the faculty of the Medical School in 1913. Dr. J. C. Litzenberg was given the chair of Obstetrics and Gynecology. He retired in 1938, becoming emeritus professor. Credit is due his predecessors, Doctors Parks Ritchie and Ames. The Litzenberg story has been told many times. The contributions of this lovable, remarkable man to Minnesota's obstetrical education are monumental. In any field of endeavor, competent, trained personnel is a prime requisite. This he realized. He gave his teaching life to the problem of turning out excellently trained men. No man was prouder than he of the accomplishments of "his boys."

He was influential in establishing the requirement of serving an internship before qualification for the degree of M.D. He played a large part in the development at the University of the system of teaching fellowships for graduate students, leading to an advanced degree of Ph.D. This was a unique innovation in medical graduate study, as was the establishment of the Center for Continuation Study. At the latter, refresher courses are offered several times yearly for obstetricians and general practitioners.

Dr. Litzenberg was a founder and influential in organization of the American Board of Obstetrics and Gynecology in 1930. The high standards for becoming a diplomate of this Board has produced better qualified specialists. Diplomates by precept and example exert a strong influence on the instruction of thousands of medical students, interns, and residents.

Dr. Litzenberg's influence in teaching sound obstetrics grew beyond the boundaries of our state. He became a national figure in his field. He was succeeded in 1938 by Dr. John L. McKelvey, who with his staff, has made a long list of scientific contributions to obstetrics. Both of these great teachers have trained men who now head departments in other medical schools. Outstanding among these men are Drs. LeRoy A. Calkins, University of Kansas; Charles McLennan, Stanford University; Emil G. Holmstrom, University of Utah; and Curtis J. Lund, University of Louisiana.

The affiliation of the Mayo Foundation for Postgraduate Study with the University of Minnesota has resulted in numerous contributions to obstetrical progress, under the former department head, Dr. Robert Mussey, and the present head, Dr. L. M. Randall.

Maternal Mortality

In 1913 the Maternal Mortality rate in Minnesota was approximately seven per 1,000 live births, one of the lowest in the country. In 1938, the year Dr. Litzenberg retired, the rate was the lowest of any state in the union. Maternal deaths have continued to decline in Minnesota. In 1947, the death rate was 0.6 per 1,000 live births, an almost irreducible minimum.

The decline in maternal mortality in the United States has been general since 1930. Many factors have entered into this. An idea developed in Philadelphia by Phillip F. Williams in the early 1930's, adopted in Minnesota and elsewhere, has contributed much to this decline. This was the organization of Maternal Mortality Committees. The Minnesota Obstetrical and Gynecological Society sponsored the idea and our Maternal Mortality Committee is conducted under the auspices of the Minnesota State Medical Association and the University of Minnesota. Maternal deaths are analyzed as to their preventability. This alerts specialists and general practitioners alike as to whether faulty obstetrics has been involved.

Preventitive Obstetric Medicine

Today, as always, the three great killers and cripplers in obstetrics are: hemorrhage, puerperal infection, and the toxemias. These complications account for 90 per cent of all maternal deaths. Availability of blood from blood banks, chemotherapeutic and antibiotic agents and prenatal care have reduced markedly the deaths from this triad of killers.

Dr. Fred L. Adair, a graduate of Minnesota and associate professor on Dr. Litzenberg's staff, later became professor and head of the Department of Obstetrics and Gynecology at the University of Chicago. He headed the American Committee on Maternal Welfare from its inception. This committee has held four large congresses attended by some 5,000 physicians, nurses, public health workers, and others interested in the field. Among Dr. Adair's many contributions to obstetric progress while at the University of Minnesota was the impetus he gave to the development of prenatal clinics and proper prenatal care.

Many other agencies took part in placing Minnesota early in this field. The activities of the State Health Department, City Health Departments, Visiting Nurses Associations, Infant Welfare Societies, and Public Health Nurses played a large role in bettering maternal and infant welfare.

Reduction of Stillbirths and Neonatal Deaths

One function of the obstetrician is to insure a healthy child. There is a twilight zone between the birth of the child where his responsibility ends and the pediatrician's begins. Stillbirths and neonatal mortality rates from all causes, as well as from premature births (greatest neonatal death factor), have been declining in Minnesota and elsewhere the past fifteen years. Recently the curve has leveled off. Further reduction must be made in this area.

In 1951, a Neonatal Mortality Committee was established. A pilot study is now being made in Hennepin County under auspices of the County Medical Society. Plans for extending such studies to Ramsey, St. Louis and other counties are envisaged. Such plans are waiting results from the pilot study in our largest metropolitan center.

That there is urgent need for progress is evidenced by the fact that there are 150,000 infant deaths yearly in the United States associated with childbirth. As many as 1,874 infants died in 1950 in Minnesota. Three-fourths of these deaths occurred within the first thirty days of life. In the present state of our knowledge, many of these deaths are considered non-preventable. Much can, must and will be done to salvage this infant wastage. This also applies to the wasteage each year in the nation of an estimated 300,000 spontaneous abortions.

Conclusion

It may be said, it seems, without appearing chauvinistic, that Minnesota can take justifiable pride in its century of obstetric progress. Many challenges lie ahead. From our past history, we may be convinced that future progress in the field will find Minnesota playing its proper rôle.

MEDICAL JOURNALISM IN MINNESOTA

(Continued from Page 348)

others concerned in organizational affairs. For the past five years I have been a member of the Advisory Committee of the State Journal Advertising Bureau (formerly the Co-operative Medical Advertising Bureau) which has been providing an increasing amount of advertisements for the member journals of the Bureau. Last year the Bureau remitted to the member journals advertisements netting over $600,000.

I wish to take this occasion to express my appreciation of the support of the associate editors and the Editing and Publishing Committees during these many years. While editing a journal requires hard work at times, it possesses a certain fascination and a reward in itself for having stimulated one's best efforts.

NEUROLOGIC AND PSYCHIATRIC TRENDS IN MINNESOTA

A. B. BAKER, M.D., B. C. SCHIELE, M.D., D. W. HASTINGS, M.D. and
R. A. JENSEN, M.D.
Minneapolis, Minnesota

THE NATURE of mental illness is such that individual families are seldom able to provide private care for mentally ill relatives. Hence, the establishment of public facilities has been and is regarded as a proper responsibility of the state. By 1862, Minnesota began to assume responsibility for the care of its own mentally ill. At first, these patients were boarded in the hospitals of neighboring states, but by 1866 the state had been able to establish temporary facilities at St. Peter, Minnesota. The first permanent building was partly completed and began to be used in 1870. Five years later, 530 patients were being cared for. Many of these had to be housed in temporary buildings as the legislative grant had not permitted the building of a sufficiently large, permanent structure. Even then, a number of unimproved patients had to be sent back to home communities in order to make room for new cases. The demand upon the existing facilities was so great that, for a time at least, each county was required to take back one partially recovered or chronic case for each new patient admitted.

These early struggles to provide adequate facilities for the ever-growing population of the mentally ill in Minnesota in large measure composed the early history of psychiatry in the state. For many years, the only physicians practicing psychiatry in Minnesota were those men who were on the staffs of the mental hospitals. Gradually, new hospitals were built and institutions were established for the care of the various types of incapacitated persons: the inebriate, the epileptic, the mentally deficient, the psychotic, and the criminally insane. Today, Minnesota has nine separate institutions with a total bed capacity of 9,546.

Throughout the years, the provision of adequate care for these sick people has constituted a serious problem and a significant drain upon the financial resources of the state. Although there have been many significant advances, the present-day problems of overcrowding, inability to obtain adequate staff, long waiting lists, and similar problems have been with us since 1866. Historically, the recent emphasis upon the mental health program of Minnesota in many ways is an interesting repetition of occurrences of the past. Then, as now, the struggle between practical economy and the desire for better facilities has led to action on the part of citizens' groups. Several "commissions of eminent medical men" have served in advisory capacities to the governors of the state. Throughout the years, the legislature has been besieged with pleas for furnishing the financial means for better care of the mentally ill. As early as 1880, petitions were made for increasing the ratio of attendants to patients, for the better selection and training of attendants, and for the abolition of restraints.

The course of neuropsychiatry in Minnesota has been molded in large part by a number of eminent medical men. In the late 1800's their industry and scholarly contributions did much to raise the level of medical practice, particularly in this specialty. The names of Drs. A. A. Sweeney, C. E. Riggs, W. A. Jones, and A. Hamilton are among those who were nationally prominent, who were studious investigators, skillful writers and teachers. These men had broad medical and civic interests.

Prior to the establishment of formal training programs in neurology and psychiatry that we have today, private practitioners generally went into the neuropsychiatric field after a period of work in a mental hospital or after being associated with a man specializing in the field. The emphasis tended to be largely on neurology and the care of the frankly psychotic. This was true on a national as well as on a local level.

In recent years, men with more formal training, particularly in the separate fields of psychiatry and neurology, began private practice in Minnesota. Since World War II, there has not only been a large increase in the number of neurologists and psychiatrists in the state, there have also appeared those who have limited themselves to the private practice of office psychotherapy and several have limited themselves to psychoanalysis. As a national phenomenon occurring during and immediately after World War II (and in some centers a number of years earlier), came a separation of the former specialty of "neuropsychiatry" into its two components of neurology and psychiatry. The fields of knowledge in each specialty have become so great that it was evident that each deserved the rating of a separate specialty. This was reflected in numerous ways: at the national level, by the reorganization of the examining body into that of the American Board of Psychiatry and Neurology with separate periods of residency training required for qualification in each specialty; at the state level, by the reorganization of the University of Minnesota Medical School Department of Neuropsychiatry into the two divisions of psychiatry and neurology with separate clinical services and teaching schedules. The two divisions, however, are in the same department and enjoy a mutually beneficial relationship. A similar division of professional labor took place in the structure of the Mayo Clinic. It is evident that there are large areas of overlap between the two specialties (for example, in the organic psychoses, in basic research problems, and so forth); but in general the two fields, in more recent years, have come to involve different types of training and different clinical techniques.

Since its early years, the Medical School has always had a division or department of nervous and mental diseases. At first its staff was made up entirely of part-time physicians. The first full-time staff appointment began with Dr. J. C. McKinley in 1921. During most of its existence, neuropsychiatry at the University had been heavily oriented toward organic neurology. The psychiatry that was taught was largely limited to the gross psychoses and was largely descriptive in character. This was in keeping with the national trends of the time.

For some years there had been recognized the need for the establishment of a Minnesota psychopathic hospital to function as a teaching and research center. After much controversy and many delays, a 37-bed psychiatric unit was opened at the University in 1937. Along with the increase in the size of the neurologic service and the establishment of an excellent neuropathologic laboratory, the University became much better equipped to teach a well rounded program in both neurology and psychiatry. It was not, however, until after World War II that the staff expanded sufficiently to allow an adequate teaching of modern psychodynamic psychiatry. Perhaps the most important change was the introduction of a comprehensive orientation of medical psychology throughout the four years of medical school.

Interest in developing a child guidance service in the Twin Cities resulted in the establishment of a Demonstration Clinic in November, 1923, which was located at the University of Minnesota. This one-year demonstration led to the establishment of three services: (1) a Child Guidance Clinic in Minneapolis under the Board of Education, (2) one in Saint Paul under the sponsorship of the Amherst H. Wilder Charities, and (3) one at the University of Minnesota to serve the state. The last service was discontinued in June, 1925 due to the lack of legislative support. However, this two-year program influenced the development of the Duluth Mental Hygiene Clinic and later paved the way for the development of comprehensive psychiatric services to children at the University of Minnesota Medical School. In 1938, the Psychiatric Clinic for Children was established at the University Hospitals and Medical School, supported initially by the Commonwealth Fund and the Stevens Avenue Home for Aged Women and Children. After a five-year demonstration period, the University gradually assumed full support of this important service as an integral part of the Medical School and University Hospitals to culminate in the establishment of an in-patient psychiatric service to children in 1952. In addition to the increased service to children and their families, this development has contributed to the psychiatric and pediatric teaching program of the Medical School.

Other psychiatric services to children include the developments at the Mayo Clinic in the middle forties and the establishment of the Washburn Memorial Clinic in Minneapolis in 1950.

Another national trend has seen the utilization of the ancillary fields of clinical psychology and psychiatric social work in both neurology and psychiatry. In 1951, the University of Minnesota Department of Psychiatry and Neurology established a third branch, the Division of Clinical Psychology. This permitted a more effective use of the techniques of psychology, not only in clinical areas but particularly in research activities.

If one were to attempt to name the most significant historical change in psychiatry, it would probably be the fact that the field of psychiatry has made the transition from its isolated position in mental hospitals to joining forces with the entire family of medicine. This has been reflected in many ways in both clinical practice and in teaching procedures. The years since World War II, at both a national and state level, have seen a marked interest on the part of both psychiatrists and non-psychiatrists in the orientation, for example, of the general physician toward those techniques of psychiatry which are useful in his everyday office practice. On his part, the psychiatrist has interested himself much more extensively in the everyday problems of medicine; for example those associated with the multitude of illnesses termed psychosomatic in nature. On his part, the internist, the general physician, and the surgeon have become interested in the psychological aspects of the illnesses which patients bring to them; and in turn these men have made real contributions to the field of psychiatry. Over the last quarter of a century, the field of psychiatry has found itself in a state of flux, this transition from the mental hospital to the general practice of medicine being one of the most significant. Another development which is just in its beginning, from the point of view of any large scale endeavor, is the marked interest in research and investigation with regard to psychological illnesses. It is highly likely that this development in the years ahead will spell one of the major contributions toward the more adequate understanding of these baffling illnesses.

During this same period, neurology has also shown a very definite change of emphasis from that of diagnosis and the care of the hopeless and chronically disabled neurologic patient to a more dynamic interest in total treatment and the care of all problems related to the nervous system, both acute and chronic. Diagnosis in the field of neurology has been expanded by the introduction of such procedures as air encephalogram, electroencephalogram, and more recently arteriogram. At the same time, a large number of newer therapies have become available for the treatment of many of the neurologic disorders such as the convulsive disorders, myasthenia gravis, neurosyphilis, subacute combined degeneration, parkinsonism, etc. This change in the emphasis of neurologic practice has been apparent in the increasing number of physicians who are taking specialty training in neurology as well as the increasing awareness of the practicing physician of neurologic problems. Research in the field of neurology has greatly expanded at the University of Minnesota and has seen a wide range of interests from the care of bulbar poliomyelitis to a new interest in the chemistry of the nervous system.

A HUNDRED YEARS OF PROGRESS IN THE THERAPY OF URINARY INFECTION

(Continued from Page 380)

Comment

It is never safe to be a prophet in a scene which is changing almost from day to day, as it is in the specialty of urology. Yet prognostication in any field of human endeavor is always inviting, sometimes fatally so. In the foregoing text an attempt has been made to point out very briefly the vast differences between the practice of urology a century ago and the practice of urology today. Some of the practitioners who helped to found the Minnesota State Medical Association learned what they knew about urology empirically; others had the benefits of the best formal training of the day. Their knowledge, in any case, was infinitesimal, and much of it was downright erroneous, in comparison with that possessed by the urologist of today. A hundred years from now, an overly hopeful seer might say, there might even be no urologists, simply because there will be no more worlds for the urologist to conquer.

Laboratory Aids to Medical Practice

Sponsored by
The Minnesota Society of Clinical Pathologists

RAPID FROZEN SECTIONS—THEIR VALUE IN DIAGNOSIS

MALCOLM B. DOCKERTY, M.D.
Rochester, Minnesota

"The paraffin sections will be rushed through and we should have the diagnosis by Tuesday." So familiar has become this pathologic proclamation that, even in this age of turbojets, clinicians and surgeons are prone to accept its implied policy of delay in terms of a modern miracle of speed. Yet, it is a fact that, with the exception of certain calcified elements such as bone and teeth, no solid tissue exists that cannot be readied for microscopic examination within minutes after its removal from the body. Pathologists are familiarizing themselves with certain fast-acting vital stains that impart to tissues a range of cytologic detail which heretofore has been impossible to obtain from similar tissues fixed for a matter of days and stained by time-honored techniques.

The present communication is intended to acquaint both general practitioner and surgeon with the advantages of exploring with their respective pathologists the possibilities offered by use of fresh frozen sections as a means of rapid diagnosis.

1. Is a specimen for biopsy representative? Even poorly prepared "slabs" of tissue are thin enough to allow for a decision as to whether the tissue is alive or dead. Nonviable tissue rarely discloses useful information after treatment by any method of fixation and sectioning and its identification as such demands further sampling by biopsy.

2. Has surgical excision encompassed the entire lesion? The answer to this vital question far too often has been disclosed by studies of "pickled" specimens. For benefits that rightly should accrue to the patient, determination of the limits of lesions, particularly new growths, should be done during operation. Nobody likes to sew "cancer to cancer," even for cosmetic results.

3. Is a malignant lesion primary or metastatic? Recently, I was consulted about a slide prepared from an ovarian tumor that had been removed from a young woman. The presence of unmistakable signet-ring cells made almost certain a diagnosis of gastric carcinoma, which later was established by gastric roentgenograms. The correct diagnosis could have been made by means of fresh frozen sections at laparotomy.

4. Is a lesion benign or malignant? The answer to this question often indicates the type of operation to be done. In more than 95 per cent of cases, this problem is settled immediately at the freezing microtome. In my opinion, malignant changes in such locations as the uterine cervix or fundus, the bladder, the breast, the thyroid, the brain and in bone—to list a few—are delineated just as clearly by the rapid freezing method as by routine paraffin techniques carried out several days later. When the lesion is a "debatable" one, it is always possible to withhold opinion and "stall for time with hematoxylin and eosin." Such lesions will frequently still be "debatable" after prolonged fixation, embedding and staining.

5. Is a lesion inflammatory or neoplastic? An excellent example of this diagnostic dilemma concerns the thickened pancreatic head in the patient who has obstructive jaundice. The issue can be resolved rapidly by use of the Silverman needle to secure deep cores of tissue. Microscopic examination of these fragments can be carried out by freezing almost as rapidly as the surgeon can remove them. Curettings from the interior of the common bile duct yield comparable information of a most useful nature to the surgeon who is con-

---

From the Division of Surgical Pathology, Mayo Clinic, Rochester, Minnesota.

templating performance of a Whipple operation or some other major procedure.

For the general practitioner, needle biopsy is coming into its own. Tissues so secured from the breast, prostate gland, thyroid, lymph nodes, spleen and liver all lend themselves to examination by the rapid freezing method. Consider the patient whose nodular liver possibly contains metastatic tumors. The clinician weighs the appreciable risk of exploratory laparotomy against the usefulness of information obtained thereby. However, with minimal risk, multiple sampling of these nodules can be done by means of the Silverman needle. Pathologic examination of these cores of tissue often settles a diagnosis that otherwise would require a week's hospitalization.

6. Finally, the method directs approaches to bacteriologic investigation. Many infections, particularly granulomas, require specific antibiotic therapy based on isolation of the causative organism. Use of fresh frozen sections may allow identification of the specific nature of these lesions; at least the method can suggest the necessity for special cultures of excised tissues. Paraffin blocks, on the other hand, make poor material for bacteriologic investigation.

These are but a few examples of the role of fresh frozen sections in diagnosis. For best results and to breed familiarity with the method, it should be employed routinely. Promotion of its use requires enthusiasm tempered with patience on the part of clinicians and surgeons, who must encourage in their colleague in the laboratory a sense of pride in his accomplishments in making correct diagnoses. They must not chide the pathologist for his reluctance to accept wholeheartedly what, at first, is to him an unfamiliar method for the examination of tissues. The pathologist, for his part, should recall that familiarity with the method breeds attempt.

* * *

This presentation, the fourth of a series of editorial reports designed to focus attention on aids to medical practice offered by the practitioner of laboratory medicine, outlines an important aspect of pathology that is tinged with the crimson of controversy among pathologists themselves. Although techniques of fresh frozen sections were first employed almost half a century ago, many freezing microtomes are gathering dust in long-forgotten corners of laboratory closets. Yet any method that, in the hands of a pathologist experienced in its use, can produce correct histologic diagnoses in more than 90 per cent of cases in a matter of a minute or two, deserves wider application than it is presently accorded. As Dr. Dockerty says, "Familiarity breeds attempt."

The Editorial Committee of the Minnesota Society of Clinical Pathologists welcomes ideas concerning this series of reports. Reprints of this article are available from either the author or the chairman of the committee.

George G. Stilwell, *M.D.*,
Chairman, Editorial Committee

Mayo Clinic,
Rochester, Minnesota

DERMATOLOGY IN MINNESOTA

(Continued from Page 377)

gral part of Minnesota dermatology as well as a strong national influence.*

Much more of dermatologic interest could be recalled: the unique characteristics of some of the earlier practitioners, the many sincere friendships and the almost complete lack of jealousies and bitterness, changes in the character and the techniques of practice in this field, and the extension of adequate dermatologic care over all of Minnesota. In all these features the story of dermatology parallels that of other fields of medicine in Minnesota and need not be recounted here.

---

*The close personal friendship and high mutual regard of Dr. O'Leary and Dr. Michelson have done much to unify, develop and expand dermatology in this area and to stimulate those who have worked with them. In character and in ability, as teachers and as physicians, they are not outranked anywhere in America.—F.W.L.

President's Letter

FOR THE BENEFIT OF THE SICK

With this issue, we officially commemorate the completion of 100 years of organized medicine in Minnesota. Because of this, it is altogether fitting that we should take a long look, both forward and backward, in an effort to see where we've been travelling and where we are going.

In looking back, we should remember that in the year of the Minnesota State Medical Association's founding, 1853, physicians, except for limited knowledge, were not essentially different from those of today. That is, they were constantly learning new scientific facts, were meeting to discuss new ideas, theories and experiments—and always with the thought in mind—"for the benefit of the sick."

After 100 years of medical organization in the state, that same theme, one of the key phrases in the Hippocratic oath, permeates medical practice as a whole and becomes the dominate motivating factor in medical progress.

Through the trials of early organization in the Minnesota State Medical Association, the pioneer doctors of the state made rapid strides both in organizational work and in scientific knowledge. With the ravages of early disease in epidemic proportions, the Medical Association became instrumental in the establishment of a State Board of Health in 1872. Preventive medicine thus received impetus in the state.

In surgery, Minnesota was one of the pioneers. The introduction of anesthesia and methods of antisepsis were generally accepted in Minnesota well before 1890. Among the surgical "firsts" in the state was the first operation reported for removal of the gall bladder.

Association activities have increased and expanded greatly over the years. Public health education has been one of the most important, together with the fostering of ever higher standards for medical education. All these activities have been aimed at the goal "for the benefit of the sick." Medicine always has, and always will be. dedicated to that purpose.

In looking forward to the continuation and further expansion of these dedicated purposes, the medical profession of the state can be proud that Minnesota ranks high among other states in scientific, educational, social and moral progress.

And, although we are this year taking stock of what we, as a medical profession, have achieved, we cannot afford to look only backward. In spite of diversions, we must look forward to even finer improvements, and we must pledge ourselves in all sincerity to higher goals in better medical care for the benefit of the sick.

Orwood J Campbell

President, Minnesota State Medical Association

◆ Editorial ◆

CARL B. DRAKE, M.D., *Editor;* GEORGE EARL, M.D., HENRY L. ULRICH, M.D., *Associate Editors*

STATE MEDICAL ASSOCIATION CENTENARY

THE YEAR 1953 is the centenary of the founding of the Minnesota State Medical Association. It was on July 23, 1853 that a small group of physicians living in the Minnesota Territory met and established the Minnesota State Medical Society.

It is interesting to pause from time to time on the occasion of certain anniversaries to review changes that have taken place in the different phases of our manner of living. Even fifty years ago, within the memory of many of us, there were no automobiles, aeroplanes, movies, radios, television sets, skyscrapers—to mention the outstanding inventions which have modified our way of living. If we go back a hundred years, life was still more primitive for there were then no telephones nor railroads—in Minnesota, at least.

When it comes to the field of medicine, the advances during the past hundred years, and more particularly in the past fifty years, have been phenomenal. The seriousness of many diseases and their very existence in certain instances has been eliminated. Consider, for instance, diphtheria, appendicitis, typhoid fever, pneumonia, mastoiditis, cholera infantum, diabetes mellitus, pernicious anemia. The progress made in medicine and public health has been reflected in the almost unbelievable rise in life expectancy and the improvement in health during the last century.

In an effort to call attention to the progress made in the medical field since our State Medical Association was founded a hundred years ago, this issue of the journal is being devoted to articles contributed by members in the various fields of medicine. They should prove to be interesting reading.

The annual meeting of the Minnesota State Medical Association will take cognizance of its hundredth birthday. An exhibit will display a typical doctor's office 100 years ago. An unusual number of out-of-state guests, including Sir Alexander Fleming and Dr. Richard R. Trail, both of London, will take part in the program.

The annual banquet will be held on Tuesday evening at the Saint Paul Hotel and will be addressed by Dr. O. J. Campbell, president of the State Association and Dr. Louis H. Bauer, president of the American Medical Association. The meeting will be featured by the popular round table discussions and symposia on Gastrointestinal Diseases, Fractures, Marginal Neuroses, Chest Diseases and Eye and Ear Diseases.

This year's meeting promises to be one of the largest in point of attendance. Fewer addresses will be given in deference to the longer time allotted to the visitors.

Attention is called to the program of the meeting which appears in this issue.

Remember the date—May 18-20; and the place—Saint Paul.

REORGANIZATION, WITH RESERVATIONS

A DRAMATIC and historic meeting of the AMA House of Delegates, which was attended and addressed by President Eisenhower, Federal Security Administrator, Mrs. Oveta Culp Hobby, Senator Robert Taft and Minnesota's Congressman Walter Judd, was held in the Statler Hotel, Washington, D. C., on March 14 for the single purpose of considering a reorganization of the Federal Security Agency. The reorganization plan, as submitted to Congress, includes renaming the department "Health, Education and Social Welfare," to be headed by Mrs. Hobby, with the probability of her becoming a cabinet member.

In 1884, the American Medical Association presented a resolution to the national government asking for a department of health, with a doctor of medicine in charge as a cabinet member. In the succeeding sixty-nine years, no such action has been consummated.

The reorganization plan for the new department divides the previous agency into health, education and social welfare. Immediately under the department head, according to the administration spokesman, there will be a doctor of medicine in charge of the division of health. To his attention will come all matters of the entire department relating to health, and out of some more than eighty different agencies now handling health matters, the affairs of almost half of these will come over the desk of the medical director.

The arguments presented for the present reorganization plan were that it is a definite step toward placing health matters in the hands of a medical man who has not been associated in the past as a career man with the government's contacts with health matters. The reorganization plan specifies that qualification.

In the administration's plan of decentralization in Washington and replacement of problems, as far as possible, in state and local hands, this reorganized department will probably have coming under its direction an increasing number of agencies of the type where the national administration desires to return duties to the state and local levels. England has a Minister of Health of cabinet rank and of considerable central authority, which probably made it easier for England to convert to its present system of state medicine. This was presented at the meeting as an argument against having a medical department of cabinet rank.

Besides the speakers first mentioned, President Bauer of the American Medical Association and Chairman Murray of the AMA's Board of Trustees also discussed the reorganization.

The House of Delegates adopted a resolution prepared by the Board of Trustees endorsing the reorganization plan, but with a preamble or reservation that in the past the profession had felt that health activities should have cabinet rank in its own right and the American Medical Association in the future would feel at liberty at any time to criticize or offer suggestions or amendments to the reorganized department.

One immediate value of the reorganization plan is that the department will be able to place in charge of the divisions, people in sympathy with free enterprise and national decentralization of the agencies involved. Without the reorganization, department heads would be those who had been blanketed into the Civil Service and members appointed under the past administrations, and hence probably not sympathetic to the new viewpoint.

AMERICAN MEDICAL EDUCATIONAL FUND DRIVE

As STATE and Sixth Councilor District Chairman of the American Medical Educational Fund Drive I would like to bring to your attention the pertinent details relating to this extremely important and worthwhile project sponsored by the American Medical Association.

As State Chairman of this educational endeavor, I met with the AMA committee in Chicago on January 25, 1953. Those in attendance were given a comprehensive outline of the aims and objectives of the Medical Educational Fund. The success of this project has broad and far-reaching implications which could well determine the future policies of our medical schools as well as indicate to the American people and our government how far we as doctors are willing to go in defense of the private practice of medicine in this country. We are fortunate in having the enthusiastic support and financial backing of many private industrial enterprises.

I should like to say here that after making a study of the AMEF, I believe it is a worthy cause. The medical schools of our country are the foundation of America's health. They turn out the doctors, medical scientists and researchers essential to economic and social progress. They train the medical manpower needed to staff our hospitals, health programs and the expanding practice of industrial medicine. To lower the standards of teaching or to reduce the medical manpower would be disastrous.

Careful and exhaustive studies indicate that our seventy-nine approved medical schools will require additional annual subsidies amounting to approximately ten million dollars. The funds must come either from government or private sources. It is obvious from the report submitted by the committee sounding out American business, that private industry prefers the latter. Both business and industry have already subscribed generously to this medical educational fund. However, many more thousands of doctors of medicine should respond in support and defense of their chosen profession.

Perhaps you are now asking, where does the need for such a large annual fund lie? Medical training is by far the most expensive field of education. The rapid increases in costs have been staggering. The average cost of training a doctor has doubled in twenty years to $10,000. Tuition fees, raised 165 per cent since 1940, pay only one-fifth of this cost. Other factors contributing to the increased cost are: (1) lengthy period of training, (2) costly laboratory facilities, (3) high ratio of teachers to students, (4) complicated training techniques arising from recent scientific advances. Why doesn't each state-supported school increase its budget requests to cover its needs? The answer to this is the same as it always has been. Drastic cuts in budgets are set up for specific uses. Herein lies the difficulty—lack of unrestricted funds. Unrestricted funds can be used to augment the salaries of worthy underpaid faculty members, provide laboratory facilities, improved and expanded out-patient services for medical students, et cetera.

How are we, as doctors in active practice, to benefit?

The medical schools of our nation are graduating over 6,000 new doctors every year—doctors with new knowledge, new techniques, and vast new resources.

It should be clear to every physician that if medical schools continue to operate without proper finances, it will seriously damage the teaching system and ultimately lower the standard of medical practice in the United States. American physicians cannot afford to permit the weakening of their professional standards which are the backbone of a nation that enjoys the highest health levels in the world today, nor can they permit the creeping paralysis of government control to envelope their schools and ultimately dictate the standards of medical practice.

Give serious thought to this venture, in which each one of us must play a part, whether we give generously according to our means, or not at all. Your contribution can be designated to the school of your choice, in which instance every dime of it will be channelled back to that school by the National Fund. Funds given directly to any medical school do not become a part of the National Fund and cannot therefore reflect professional support, which in turn would have a bearing upon contingent donations from business and industry. Undesignated gifts will be prorated among the seventy-nine medical schools.

Bear in mind, contributions to the AMEF are tax exempt. Therefore, you can afford to be generous by allowing yourself a reduction in your taxes at the same time you are supporting a mighty worthy cause.

H. E. Drill, M.D., *Chairman Minnesota Division and Sixth Councilor District of American Medical Association Educational Fund Drive.*

FALSE PROPAGANDA

ONE of the most inexcusable examples of propaganda in its worst form was a movie which appeared over twelve television channels in California a few months back. The broadcast was sponsored by the International Association of Machinists. Just why this union should spend its money to mislead the public, we do not know.

The playlet, entitled "Without Fear," is a story based on statements assumed to be true that 325,000 Americans die annually because only one out of five can afford the costs of serious illness; that America needs three times as many physicians as we have; that America has only half the hospital beds it needs, et cetera.

A story is dramatized in which a parent of modest means calls a physician for a sick baby. One physician can't come, another won't, another demands preliminary assurance of an unreasonable fee ($15). The baby dies; care came too late after the distraught mother takes it to the hospital where she learns that the baby is the victim of neglect. The story brings in an overworked physician who just can't meet the demands on his time and energy.

The movie then goes on to explain that the shortage of physicians is due to the AMA which refuses to admit a shortage of physicians, for members find it to their advantage for a shortage to exist. Then it is told that if the government only ran the medical care of the people and that if the bills in Congress to accomplish this were only passed instead of being blocked by AMA lobbyists, all would be well.

No mention is made of the possibility that there are plenty of physicians in relation to the population; that the output of physicians is increasing at a faster rate than the general population; that the AMA is not responsible for the production of physicians by the medical schools; that the overall cost of medical care would probably be increased tremendously and the service would be of inferior quality under government control; that the experience with socialism in New Zealand, Australia and Great Britain has resulted in a reversal of public opinion.

This movie, "Without Fear," is a convincing proof that efforts to socialize the medical profession and the country have not been abandoned. The price of liberty is eternal vigilance.

GAMMA GLOBULIN FOR MEASLES AND HEPATITIS

Recently, the National Foundation for Infantile Paralysis completed negotiations for the purchase of the present inventory of certain processors of commercial gamma globulin as well as the future production by these same producers. In agreement with the American National Red Cross all gamma globulin processed from Red Cross donated blood, as well as the commercially produced gamma globulin purchased by the National Foundation, has been placed under control of the Office of Defense Mobilization. The National Foundation does not have in its possession or control any supply of the blood fraction.

It has been agreed by all parties concerned that gamma globulin will be available for measles prophylaxis and for use by physicians in the treatment of infectious hepatitis, irrespective of the resulting limitation of gamma globulin available for use in poliomyelitis epidemics.

The Office of Defense Mobilization will allocate the available gamma globulin through State and Territorial Health Officers for use in measles and infectious hepatitis, and will make additional distribution for the purpose of controlling poliomyelitis.

Physicians who are unable to purchase gamma globulin through their regular drug supply channels are advised to request supplies from their local or state health departments. There will be no charge for this gamma globulin, since the Red Cross has already paid for the processing and packaging of the material, and the National Foundation for Infantile Paralysis, through its arrangement with the commercial processors, has purchased the commercial supply at the same rate as that currently supplied defense agencies under governmental contract.

The National Foundation does not have gamma globulin available for distribution, nor will it determine how available supplies shall be used. That is the function of the Office of Defense Mobilization.

Since it has been obvious for some year and a half that gamma globulin would be in short supply, the above plan was agreed upon by all interested agencies, governmental, private and public, to avoid wasteful use of gamma globulin.—*National Foundation for Infantile Paralysis Release March 13, 1953.*

Only by a biopsy competently interpreted can the diagnosis of malignant lymphoma be anything more than a guess.

THE PROBLEMS OF TUBERCULOSIS CONTROL

Recent advances in the treatment of tuberculosis have raised for new consideration the question of proper balance among the procedures now employed in control of this disease.

During the period from 1900 to 1925 there was a rapid advance in diagnosis due to improved roentgenological techniques and bacteriological methods. Treatment, which, before 1925, had emphasized fresh air, proper food, and rest, acquired pneumothorax and collapse therapy. The second quarter century was one of accelerated development of case finding, hospitalization for purposes of isolation and care, a variety of measures for prevention, and finally social assistance for patients and their families.

This brings us to the opening of the third quarter. Optimists, watching the declining mortality from tuberculosis, predict its virtual eradication in the United States. Conservatives are concerned with the continuing high prevalence of known cases. In any event there is immediate urgency in co-ordinating and integrating the present measures. The decision as to the wisdom of a change or modification of our efforts will depend on our evaluation of the success of present measures of which a brief summary is presented for consideration.

Case Finding: There are three major methods of case finding today. The first is the discovery of cases by physicians engaged in private practice. Private practitioners are the ones most likely to have first knowledge of cases that have progressed to actual symptoms. The second is search for cases on a contact basis. This is essentially clinic practice and rests on the principle that one case of the disease comes from another. The third, mass roentgenographic surveys of large segments of the population, is organized on the sound theory that a large enough relatively inexpensive net will gather in most of the unknown cases.

Medical Treatment: Medical treatment has passed through the stages of primary emphasis on hygienic care, collapse therapy, surgical measures, and drug treatment, to the present period of a combination of chemotherapy and surgical practice, and effective rehabilitation. The cardinal requirement is the hospital bed for tuberculosis, and it is indeed the crux of present-day problems.

Prevention: Proper treatment is itself a large part of prevention because it removes sources of contagian from susceptible persons. In the best organized communities today, hospital treatment of the patient is supplemented by supervision and education of family at home. To this is added in small segments of our population, BCG vaccination.

Social Assistance: This varies all the way from abolition of the means test as a requirement for hospital admission to direct financial grants to a patient's family during the period of non-employment of the patient.

All social assistance programs include rehabilitation of hospital patients. Experience has shown that the patient's morale and faithfulness in taking treatment depend in large part on the support given his family in his absence.

Mortality: Tuberculosis mortality in the United States declined 90 per cent from 1900 to 1950. The mortality in 1950 was only half that of 1945. Tentative figures indicate that the death rate for 1951 was 20 per 100,000 population. A breakdown by race, sex, and age shows that the mortality rate in non-white persons is about three times that in white persons, and that more than half of all deaths from tuberculosis now occur after the age of forty-five years. The greatest number of deaths from tuberculosis today occurs in old white males.

Prevalence: It is agreed that the *known* prevalence of the disease has declined little in the last twenty years. Failure to decline is due, in part, to improved case-finding procedures and increased longevity of patients. The total number of cases of active disease in the United States is 400,000, approximately 250,000 of which are known to health departments.

Incidence: The average annual incidence of new cases reported in the whole country has been about 120,000 in recent years. The figure was 118,000 in 1951, a drop of 19,000 cases from the 137,000 in 1948. This drop is probably significant.

Hospitalization: Hospitalization is recognized as the core of tuberculosis control. Until recently the minimum number of beds required for adequate control was judged to be two and a half times the number of deaths from tuberculosis annually in the community. Three beds per annual death were recommended. Many communities are still far from meeting the minimum standard but some substantially exceed it. At present in the United States approximately 102,000 beds are set aside specifically for tuberculosis. The standards in the future may be based on known prevalence rather than deaths.

Cost of Tuberculosis Program: The annual total cost of tuberculosis control in the United States is calculated as $350,000,000, exclusive of construction expense and the cost of training personnel. This includes the sums spent on hospitalization, which is figured at $200,000,000 a year, or more than half the cost of the whole tuberculosis program. Finally, we may note that the average cost of one case of tuberculosis is about $15,000.

With this background, what is the best plan for tuberculosis control in the future? Two courses are obviously open, viz., (1) to keep on as we are doing, improving procedures whenever possible, and (2) to revise the program by introduction of some new principle. We may rest reasonably well assured that in time the first of these procedures will relegate tuberculosis to a minor position among diseases, though only at great cost. It will mean a steady increase in measures for case finding, more hospital beds and larger sums for rehabilitation. If inflation continues, the dollar cost will be magnified. Even so, the price might be small in comparison with allowing tuberculosis to persist in our population.

A better course cannot be outlined now, but some elements of the program merit careful scrutiny. The hospital program costs $200,000,000 and this will probably be increased. The internist may inquire if full advantage is being taken of the powerful force of private practice in supplementing hospital care. Hospitalization in effect does not provide for all the tuberculous patients in need of care, and many hospitals have waiting lists. The latest and best methods of surgery and chemotherapy have not shortened but freqeuntly have lengthened the optimum period of hospital stay.

Herein, however, lies one possible change in which the private practitioner is concerned. After completion of the necessary active therapy and the accompanying indoctrination in personal care, could not the time-consuming final steps in the cure, particularly the essential long continued chemotherapy, be carried out at home, with safety and success, by private physicians?

This suggestion may have merit. Much depends on improved understanding of tuberculosis by physicians in general practice and on the character of the homes in which treatment is given. Tuberculosis is most prevalent today in the economically underprivileged. The problem is not purely medical, but is inextricably bound up with social issues. There is reason to hope that the standard of living will continue to rise. In the meantime, more intelligent application of the skills of practicing internists may solve part of the problem. Competent home after-care of tuberculous patients who have had a satisfactory course of institutional treatment, is one possible way of saving hospital time and relieving bed shortages.—By Esmond R. Long, M.D., *Annals of Internal Medicine*, November, 1952.

WANTED—Millions of Miracle Makers!

Over 60 million Americans can be miracle makers. You are probably one of them. Any person from 21 to 59 who is in good health and weighs 110 pounds or more is eligible.

The miracle you can perform is saving human life. Yes, you can really help save precious lives. And it is important that you do it right now!

Although the miracle of saving human life challenges the imagination, you can do it with a little of your blood. In less than an hour you can simply and painlessly donate a pint of your blood to help someone live.

The National Blood Program is calling on you to help in this miracle making business so that no one here at home or our men fighting in Korea need die for want of this vital substance.

You are needed at your local Blood Donor Center now. Call your local Red Cross Chapter to schedule your donation today.

Medical Economics

Edited by the Committee on Medical Economics
of the
Minnesota State Medical Association
George Earl, M.D., Chairman

FACILITIES INCREASE FOR RURAL MEDICAL CARE

The eighth National Conference on Rural Health, held in Roanoke, Virginia, on February 27 and 28, was told that medical care facilities in rural areas are increasing rapidly through the cooperative, voluntary efforts of medical, farm and community groups.

The report was made by Dr. Louis H. Bauer, president of the American Medical Association, who told delegates, "All groups are cooperating in an effort to bring the highest standards of medical care to rural areas. No one organization can do the job by itself. It requires community effort."

States Past Difficulties

Dr. Bauer outlined past difficulties which rural communities encountered in obtaining physicians for their areas. He said:

> "One of the difficulties in the past has been the developing of some means to attract physicians to those regions lacking them. A physician who has spent 8 to 13 years of his life in being trained to practice modern medicine is not willing to settle in an area where there are no facilities for practicing such a type of medicine. Increasing the number of physicians will not do it, as they would still tend to congregate in cities."

Dr. Bauer pointed out that in some states, the problem has been solved by the community, which provides medical facilities and then permits the physician to rent those facilities or to buy them through gradual payments. "Where this has been done, physicians have been obtained," he stated. He noted, too, that in these days of good roads and automobiles a physician can cover a wider territory than before, and is able to take care of more people. He concluded that, "every community does not need a hospital so long as one is available within a reasonable distance and good roads lead to it."

No Santa Claus Program

The solution to many of the rural health problems is being found without the aid of statism theories, reported Dr. F. S. Crockett, chairman of the American Medical Association's Council on Rural Health.

Dr. Crockett said that in the planning for adequate medical care in small communities, one of the uppermost points has been that "there was to be no Santa Claus in the picture." He noted that much group strength has been obtained through the establishment of rural health councils, made up of all facets of community life, without extra Santa Claus aid from governmental agencies. "These councils," he said, "in many instances have brought about the elimination of health hazards and have taught simple health rules to improve conditions."

Since 1946, Dr. Crockett stated, many doctors have settled in villages, and he added that, "it is in communities on the lower economic income level that the greatest challenge exists. Places with poor schools, churches, roads, homes and farms go hand in hand with inadequate medical care."

Health Insurance Gains

The vice chairman of the AMA's Council on Rural Health, Dr. Carll S. Mundy, who told the delegates that voluntary group health and accident insurance coverage of farmers and their families, as an economical means for them to meet medical care costs, is on the increase. He noted that successful groups have been formed within farm organizations, among church members and among depositors of rural banks. In contrasting procedure of farm and city health insurance groups, Dr. Mundy stated: "Since payroll deduction is impossible for farm families, some other satisfactory and economical arrangement must be made to collect and forward premiums for the group."

The meeting drew more than 600 representatives of medical, agricultural, university extension services and other groups wth a combined membership of several millions. Forty-two states and the District of Columbia were represented at the conference.

The delegates were informed of many of the reasons why rural areas seemed to lack physicians. Dr. Paul D. Sanders, editor of the *Southern Planter,* blamed medical care problems in the rural areas of the South on the advantages of larger cities which draw doctors, dentists and nurses along with other segments of the rural population. He felt that another factor has been the backwardness of the South in modernizing its farming activities.

Local Examples Cited

Many speakers told of how communities had worked together to make their area attractive to a new doctor. One cited a small town whose residents organized, and with the help of the local farm organization, the county medical society and the state council on health and medical care, interested a young doctor in starting his practice there. They provided him with a building for a clinic and a place to live. Today, the clinic serves weekly from 250 to 300 patients from a widespread area. Another Southern community passed three bond issues to obtain a 55-bed hospital.

The theme of the meeting, "Widening the Highways to Health," was presented to the delegates by speakers from all phases of medical and rural life.

COMMISSION FORMED TO STUDY TAXES, SOCIAL SECURITY

A newly formed federal commission to study taxes and social security will begin work at once, to complete the study in one year. The commission, formed at the suggestion of President Eisenhower, is composed of Congressional, federal and state officials and will scrutinize federal-state relations in the fields of taxes and health and social security, and is authorized to recommend legislation.

Membership will include representatives named by the President, plus others designated by Congress and by the State Governors' Conference.

The commission originated at a White House meeting in February which was attended by representatives of the governors, Congress and the executive branch. President Eisenhower later issued a statement saying that the federal social security system warrants study. He stated:

> "This analysis should encompass not only the distribution of costs between the state and the federal government, but also the operation and coverage of the system itself. It is a proper function of government to help build a sturdy floor over the pit of personal disaster. . . . However, we are equally committeed to carrying out that great program efficiently and with greatest benefit to those it is designed to help."

Meanwhile, Daniel A. Reed, chairman of the House Ways and Means Committee, has appointed a seven-man subcommittee to make an "extensive study" of the entire social security system. It is the hope of Representative Reed that no legislation will be enacted in this field until the study is completed.

SURVEY SHOWS GP FARES WELL

According to the seventh *Medical Economics* survey, the average general practitioner in the United States is better off financially than at any time in the past.

That fact came as the result of answers to questionnaires sent to general practitioners last April by *Medical Economics* magazine. These doctors constitute a representative cross-section of the profession, and the information they supplied covers many phases of the economics of private medical practice in America, the magazine contends.

This information, as reported in "Public Health Economics," shows that "the independent GP reports an average gross income, for instance, of $23,766 for 1951. His net income in that year, before taxes, was $14,098—a rise of almost 50 per cent since 1947, and of more than 100 per cent since 1943."

Another factor is apparent from the survey:

> "Meanwhile, the financial gap that once separated him from his specialist colleague is narrowing. In 1943, he netted little more than half as much as the average specialist. In 1947, he netted about two-thirds as much. Nowadays he nets about four-fifths as much."

Increase Analyzed

Reasons for the fact that the general practitioner's increase in income are stated in the survey: "For one thing, he puts in longer hours than most other doctors—an average of sixty-two a week. So when his income is figured on an hourly basis, it becomes a shade less impressive. . . . Then, too, consider the brisk working pace of the G.P. He sees thirty-one patients in a typical day. . . . His total operating costs amount to $9,668—or 41 per cent of his gross from practice. Office rent and automobile upkeep . . . are big items; but salaries, drugs, and supplies are even bigger, accounting in the aggregate for more than half his total professional outlay."

Income in "Dribbles"

However, the report states the income of the general practitioner comes to him in "dribbles" which rather offset the value of his expanded facilities and increased income. The report explains:

> ". . . today's GP still gets most of his income in dribbles: a median of $3 for an office call, $5 for a house call, $6 for a night call. Fortunately, he's been collecting more of his accounts of late; he now actually gets about 85 per cent of the money his patients owe him—a big improvement over the depression years, when he thought himself lucky to get 70 per cent."

Insurance Payments Aid

Not all of the doctor's income comes directly from his patients. The report notes that payments from Blue Shield and other medical-surgical plans are becoming more and more important to the general practitioner. For instance, in 1951, these plans paid him an average of $2,136, which amounts to about two-thirds of the amount that such plans paid the average specialist.

Comparisons on a general economic basis were made between the specialist and the general practitioner. The survey reports them as follows:

> "(1) Collections are somewhat less of a problem to the specialist than to the GP. The average specialist collects 88 per cent of his accounts (as against the GP's 85 per cent), and takes in $3,206 a year from Blue Shield and other health plans (compared with the GP's $2,139).
>
> "(2) The average specialist, like the average GP, reaches his income peak between his tenth and nineteenth years in practice. His income falls off rather steadily after that.
>
> "(3) The highest incomes for specialists show up in cities of 50,000-500,000; the lowest, in places of under 50,000 and in very large metropolitan areas. . . ."

Of the million hospital beds needed during the next 15 or 20 years, two-thirds will be for the chronic sick, including mental and tuberculous patients.—A. P. Merrill, M.D., *New York State Medical Journal,* October 1, 1952.

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

230 Lowry Medical Arts Building
Saint Paul, Minnesota

Julian F. DuBois, M.D., Secretary

LICENSE OF MINNEAPOLIS PHYSICIAN REVOKED FOR NARCOTIC VIOLATION

Re United States of America vs. Russell R. Heim

On February 13, 1953, the medical license of Russell R. Heim, M.D., sixty-six years of age, Wesley Temple Building, Minneapolis, was revoked by the Minnesota State Board of Medical Examiners. Dr. Heim's license was revoked following his conviction in the United States District Court at Minneapolis. A jury found Dr. Heim guilty on 229 counts in the indictment returned against him by the grand jury alleging violations of the Harrison Narcotic Act. On November 10, 1952, Dr. Heim was sentenced to a term of four years in a Federal Prison by the Hon. Gunnar H. Nordbye, Judge of the United States District Court. Dr. Heim is serving his sentence at the United States Reformatory at Milan, Michigan.

Dr. Heim, at the time of his conviction, was the Coroner of Hennepin County. He received his M.D. Degree in 1910 at the University of Illinois. He was licensed in Minnesota by reciprocity in 1919.

LICENSE OF BELGRADE, MINNESOTA, PHYSICIAN SUSPENDED FOR THREE YEARS

Re George F. Engstrom, M.D.

On February 14, 1953, the license to practice medicine held by George F. Engstrom, M.D., forty-nine years of age, Belgrade, Minnesota, was suspended by the Minnesota State Board of Medical Examiners for a period of three years. Dr. Engstrom was found guilty by the Minnesota State Board of Medical Examiners of immoral, dishonorable and unprofessional conduct, as defined by law. Dr. Engstrom admitted that between the 1st day of January 1949 and the 18th day of June 1952, he had prepared "numerous fictitious, fraudulent and excessive claims for remuneration for professional services * * *." The fictitious, fraudulent and excessive claims made out by Dr. Engstrom were submitted to various insurance companies and other groups covering hospital and medical care benefits, including Blue Cross and Blue Shield.

It was the opinion of the Minnesota State Board of Medical Examiners that Dr. Engstrom's misconduct warranted a permanent revocation of his license. However, in view of the fact that Dr. Engstrom made full and complete restitution to all of the insurance companies involved, as well as to Blue Cross and Blue Shield, some measure of leniency was extended to him. The Medical Board warned, however, that such leniency may not be extended in the future if there is evidence that other physicians in Minnesota are involved in similar practices. Dr. Engstrom, in connection with the same matter, on July 14, 1952, entered a plea of guilty in the District Court of Ramsey County, to an information charging him with grand larceny in the second degree. Dr. Engstrom is to be sentenced on May 4, 1953, for that offense.

Dr. Engstrom was born in Sweden on April 5, 1903, and received his M.D. degree from the University of Minnesota in March 1928. He was licensed by the Minnesota State Board of Medical Examiners in July 1927, by examination upon receiving his Bachelor of Medicine Degree. He has been located at Belgrade, Minnesota, since August 1928.

Minnesota State Medical Association

One Hundredth Anniversary Meeting

Saint Paul, Minnesota

May 18, 19 and 20, 1953

Program

BUSINESS SESSIONS

SATURDAY, MAY 16

Hotel Saint Paul

2:00 P.M.—Council........................Room 334
6:00 P.M.—Council........................Room 234

SUNDAY, MAY 17

Hotel Saint Paul

8:30 A.M.—Council..................Windsor Room
10:00 A.M.—Reference Committees................Rooms to be assigned
2:30 P.M.—House of Delegates.....Continental Room
8:00 P.M.—House of Delegates.....Continental Room

MONDAY, MAY 18

Hotel Saint Paul

8:30 A.M.—Council..................Windsor Room
12:15 P.M.—House of Delegates.....Continental Room

TUESDAY, MAY 19

Hotel Saint Paul

8:30 A.M.—Council..................Windsor Room
8:30 A.M.—Committees.........Rooms to be assigned

WEDNESDAY, MAY 20

Hotel Saint Paul

8:30 A.M.—Council..................Windsor Room
8:30 A.M.—Committees.........Rooms to be assigned

SOCIAL EVENTS

MONDAY, MAY 18

Luncheons

American Medical Women's Association, Inc., Minnesota Chapter

12:15 p.m., Women's City Club

Make reservations through the secretary, Dr. Catherine Burns, 201 S. Broadway, Albert Lea, or Dr. Nellie Barsness, 540 Lowry Medical Arts Building, St. Paul 2.

Open to all visiting women doctors. Dr. Marie Bepko will discuss the International Convention in Vichy, France, and will illustrate her talk with colored slides.

Minnesota Medical Foundation

12:15 p.m., Casino, Hotel Saint Paul

Speaker: Dr. E. T. Bell, Emeritus Professor of Pathology, University of Minnesota, discussing some of the past history of the Medical School.

Tickets should be obtained from Dr. Wesley W. Spink, University Hospitals, Minneapolis 14. Price $1.75.

Dinners

Minnesota Chapter, American Academy of General Practice

5:00 p.m., Social Hour, Fiesta Room, Hotel Lowry

6:00 p.m., Dinner, Main Ballroom, Mezzanine, Hotel Lowry

Speakers: Dr. Harold S. Diehl, Dean, Medical School, University of Minnesota; Hon. C. Elmer Anderson, Governor of Minnesota; Congressman Walter Judd, M.D.

Tickets at $5.00 each should be obtained in advance from Dr. Emil J. Fogelberg, 45 N. Snelling Avenue, St. Paul. Open to all physicians.

Minnesota Radiological Society

7:30 p.m., Minnesota Club, 317 Washington St.

Speaker: Dr. Joseph C. Bell, President, Radiological Society of North America, Louisville, Kentucky, who will discuss "The Private Practice of Radiology."

Special Meeting

Nu Sigma Nu

5:00 p.m., Social Hour, Windsor Room, Hotel Saint Paul

TUESDAY, MAY 19

Dinners

Presidential Reception

5:30 to 6:45 p.m., Casino, Hotel Saint Paul

Physicians and their wives attending the annual banquet will be guests of the Physicians and Hospitals Supply Company and the Ulmer Pharmacal Company, Minneapolis.

Annual Banquet, Minnesota State Medical Association

7:00 p.m., Continental Room, Hotel Saint Paul

WEDNESDAY, MAY 20

Luncheon

Minnesota Chapter, American College of Chest Physicians

12:15 p.m., Room 234, Hotel Saint Paul

Dinner

Minnesota Society of Clinical Pathologists

6:30 p.m., St. Joseph's Hospital, Saint Paul.

GENERAL SESSIONS

MONDAY, MAY 18

A.M.

8:30 Visit Scientific and Technical Exhibits...... Auditorium

9:00 CANCER OF THE LUNG. Auditorium Theater
The Clinical Aspects of Bronchogenic Carcinoma
ALTON OCHSNER, The William Henderson Professor of Surgery and Chairman of the Department of Surgery, School of Medicine, Tulane University of Louisiana, New Orleans, Louisiana

9:30 The Role of Chest X-Ray Surveys in Diagnosing Bronchogenic Carcinoma
RICHARD R. TRAIL, St. Joseph's Hospital Centennial Lecturer, London, England

10:00 Question-and-Answer Period

10:15 **Intermission**

Visit Scientific and Technical Exhibits...... Auditorium

11:00 Infectious Diseases of the Heart Other Than Rheumatic Fever...........Auditorium Theater
THOMAS J. DRY, Rochester

11:30 Antibiotics in Heart Disease
SIR ALEXANDER FLEMING, M.D., F.R.S., Director, St. Mary's Wright-Fleming Institute, London, England

Afternoon

P.M.

12:15 Miscellaneous Luncheons

1:30 Visit Scientific and Technical Exhibits...... Auditorium

2:00 GASTROINTESTINAL DISEASE........ Auditorium Theater
Russell D. Carman Memorial Lecture
Problems in the Roentgen Diagnosis of Bleeding Lesions of the Upper Gastrointestinal Tract
JOSEPH C. BELL, President, Radiological Society of North America, Louisville, Kentucky

2:30 Massive Hemorrhage of the Upper Gastrointestinal Tract
JOHN M. DORSEY, Associate Professor of Surgery, Northwestern University, Chicago, Illinois

2:50 Peptic Ulcers
OWEN H. WANGENSTEEN, University of Minnesota

3:15 **Intermission**

Visit Scientific and Technical Exhibits...... Auditorium

4:00 SYMPOSIUM ON FRACTURES......... Auditorium Theater
Hand and Finger Fractures
WESLEY H. BURNHAM, Minneapolis
Wrist Fractures....EDWARD H. JUERS, Red Wing
Sprains of the Ankle. D. K. MILLETT, Minneapolis
The Timing of Fracture Treatment
FRANK S. BABB, Saint Paul

5:00 Visit Scientific and Technical Exhibits....... Auditorium

5:15 Obstetric Manikin Demonstration....Stem Hall
PAUL N. LARSON, Minneapolis

6:00 Special Dinners

9:00 Open House

TUESDAY, MAY 19

A.M.

8:30 Visit Scientific and Technical Exhibits...... Auditorium

9:00 Sterility in the Male........Auditorium Theater
HAROLD J. WALDER, Duluth

9:20 Sterility in the Female....................
LOUIS L. FREIDMAN, Saint Paul

9:40 Venous Thrombosis...........ALTON OCHSNER, The William Henderson Professor of Surgery and Chairman of the Department of Surgery, School of Medicine, Tulane University of Louisiana, New Orleans, Louisiana

10:15 **Intermission**

Visit Scientific and Technical Exhibits...... Auditorium

11:00 Use of Radioactive Substances in the Treatment of Disease.............Auditorium Theater
J. E. RALL, Memorial Center, New York, New York

11:30 Carcinoma of the Ovary with Special Emphasis on Prevention, Early Diagnosis and Recent Advances in Therapy
WILLIAM C. KEETTEL, Associate Professor of Obstetrics and Gynecology, State University of Iowa, Iowa City, Iowa

Afternoon

P.M.

12:15 Round-Table Luncheons

1:30 Visit Scientific and Technical Exhibits....... Auditorium

2:00 MARGINAL NEUROSES IN EVERYDAY PRACTICE................Auditorium Theater
Introductory Orientation
NORMAN JOHNSON, Minneapolis
The Patient Consults..F. J. HIRSCHBOECK, Duluth
The Pathogenic Parent
LOUIS L. FLYNN, JR., Saint Paul
The Dynamic of Emotions
HOWARD P. ROME, Rochester
Facts and Fallacies in Therapy
NORMAN JOHNSON, Minneapolis

3:15 **Intermission**

Visit Scientific and Technical Exhibits...... Auditorium

4:00 Intracellular Parasitism with Special Reference to Rocky Mountain Spotted Fever........... Auditorium Theater

James R. Dawson, Jr., Professor and Head, Department of Pathology, University of Minnesota Medical School,

4:30 Some Aspects of Diagnosis, Treatment and Prognosis of Erythroblastosis
Bruce Chown, Winnipeg, Canada

5:00 Visit Scientific and Technical Exhibits....... Auditorium

5:15 Obstetric Manikin Demonstration....Stem Hall
George E. Rogers, Detroit, Michigan

7:00 Annual Banquet.......................... Continental Room, Hotel Saint Paul

WEDNESDAY, MAY 20

A.M.

8:30 Visit Scientific and Technical Exhibits....... Auditorium

9:00 MEDICINE'S SOCIO-ECONOMIC PROBLEMS.....................Auditorium Theater

The Doctor and His Estate
Mr. H. A. Blackmun, Rochester

The Doctor as a Medical Witness
Mr. Raymond A. Scallen, Minneapolis

A Country Newspaperman Wants More "Horse and Buggy" Doctors
Mr. Alan C. McIntosh, Luverne

The Doctor as a Citizen
Mr. Warren E. Burger, Assistant Attorney General of the United States, Washington, D. C.

10:15 **Intermission**

Visit Scientific and Technical Exhibits....... Auditorium

11:00 The Lupus Erythematosus Problem......... Auditorium Theater
Henry E. Michelson, Minneapolis

11:30 Arthur H. Sanford Lectureship in Pathology
Coroner Versus Medical Examiner
Alan Richards Moritz, Professor of Pathology and Director of the Institute of Pathology, Western Reserve University, Cleveland, Ohio

Afternoon

P.M.

12:15 Round-Table Luncheons

12:15 Special Luncheon

1:30 Visit Scientific and Technical Exhibits....... Auditorium

2:00 SYMPOSIUM, MINNESOTA CHAPTER OF THE AMERICAN COLLEGE OF CHEST PHYSICIANS ....Auditorium Theater

The Minnesota Medical Profession and Tuberculosis
J. Arthur Myers, University of Minnesota

Intrathoracic Tumors: Clinical Manifestations and Surgical Treatment
Stuart W. Harrington, Rochester

3:00 SYMPOSIUM, MINNESOTA ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY ....Auditorium Theater

The Control of Nosebleed
O. E. Hallberg, Rochester

The Red, Sore Eye
Malcolm McCannel, Minneapolis

12:15 ROUND TABLES, TUESDAY, MAY 19

Hotels Saint Paul and Lowry

Differential Diagnosis of Jaundice
C. J. Watson, Minneapolis

Benign and Malignant Tumors of the Rectum
R. J. Tenner, Minneapolis

Varicose Veins in Pregnancy
Frank W. Quattlebaum, Saint Paul

Urinary Infections
B. A. Smith, Minneapolis

Psychosomatic Factors in Dermatology
M. G. Fredricks, Duluth

The Mentally Deficient Child—A Medical Problem
Reynold A. Jensen, University of Minnesota

Treatment of Back Pain
Wallace H. Cole, Saint Paul

Trends in Treatment of Blood Dyscrasias
Charles F. Stroebel, Rochester

Treatment of Constipation
J. Allen Wilson, Saint Paul

Bleeding in the Third Trimester of Pregnancy
George E. Rogers, Detroit, Michigan

WEDNESDAY, MAY 20

Management of Premature Labor
John A. Haugen, Minneapolis

Treatment of Painful Shoulder
Mark B. Coventry, Rochester

Treatment of Diarrhea
R. S. Ylvisaker, Minneapolis

Office Gynecology
Donald W. Freeman, Minneapolis

Anticoagulant Therapy
John J. Boehrer, Minneapolis

Selection of Patients for Cardiac Surgery
H. B. Burchell, Rochester

Diabetes in Childhood
Robert A. Ulstrom, University of Minnesota

Fluid and Electrolyte Balance
Arnold J. Kremen, University of Minnesota

The Problem of Dizziness
A. C. Hilding, J. J. Coll, Gordon J. Strewler, Duluth

Resuscitation of the Newborn
Ellis N. Cohen, Saint Paul

Inhibition of Excess Parasympathetic Stimuli in Peptic Ulcer with Banthīne®

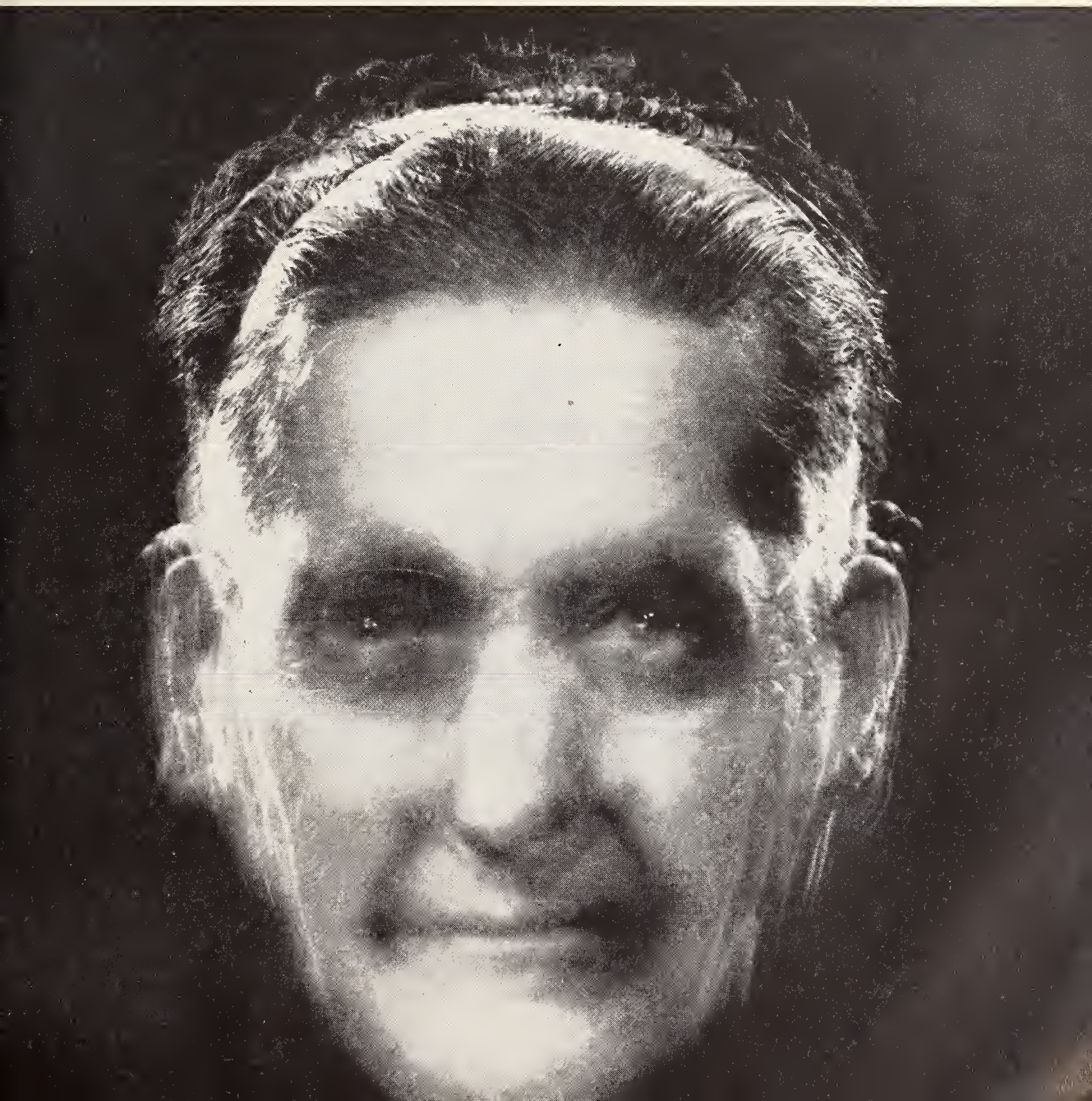
Medical literature now contains more than 200 references to the beneficial role of Banthine Bromide (brand of methantheline bromide) as evidenced by a marked healing response of peptic ulcers. Rapid symptomatic improvement, particularly with reference to pain relief, is followed by roentgenographic demonstration of crater filling.

The therapeutic action of the drug in decreasing hypermotility and hyperacidity, together with the remarkable early subjective benefit, is indeed a desired approach in ulcer management.

Treatment is individualized to the patient's needs. One or two tablets (50 to 100 mg.) is administered every six hours, around the clock, in conjunction with appropriate diet control and antacid medication as indicated.

Banthine is accepted by the Council on Pharmacy and Chemistry of the American Medical Association. Searle: Research in the Service of Medicine.

Ulcer Facies Composit



◆ Reports and Announcements ◆

ST. JOSEPH'S HOSPITAL CENTENNIAL

The following scientific program, in celebration of the 100th anniversary of the founding of St. Joseph's Hospital, Saint Paul, will be held in the Saint Paul Auditorium on the morning and afternoon of Saturday, May 16, 1953. A banquet in the evening will be held at the Saint Paul Hotel. Physicians are cordially invited to attend the sessions, and the banquet will be open to the public.

Sunday, May 17, will be devoted to religious services at the Saint Paul Cathedral in the morning, with a program of addresses at St. Joseph's Hospital in the afternoon.

Morning Session—9:00–12:00 M.

Presiding: Justus Ohage, M.D.

Invocation—The Reverend Francis W. Curtin, Bishop's Representative for Hospitals, Director of Diocesan Bureau of Charities

Message from the Minnesota Medical Association—O. J. Campbell, M.D., President, Minnesota Medical Association

Message from the Ramsey County Medical Society—Philip F. Donohue, M.D., President, Ramsey County Medical Society

"Humoral vs. Nervous Control of the Gallbladder"—Edward Boyden, M.D., Professor and Chief, Department of Anatomy, University of Minnesota

"The X-Ray Diagnosis of Gallbladder Disease"—Byrl R. Kirklin, M.D., Chairman of the Section of Radiology, Mayo Clinic, Rochester, Minnesota

"Coronary Disease and the Gallbladder"—Thomas J. Dry, M.D., Chairman of the Section of Cardiology, Mayo Clinic, Rochester, Minnesota

"Indications and Precautions in Cholecystectomy"—Warren H. Cole, M.D., Professor of Surgery, University of Chicago, Illinois

"Tissue Permeability"—William Boyd, M.D., Professor of Pathology, University of British Columbia

Intermission—11:10–11:20 A.M.

Presiding: O. J. Campbell, M.D.

President of Minnesota State Medical Association

"Experiences in Mass Photofluorography"—Richard Trail, M.D., London, England

"Coagulation of the Blood"—Armand J. Quick, M.D., Professor of Biochemistry, Marquette University

Afternoon Session—2:00–4:00 P.M.

Presiding: Eugene M. Scott, M.D.
Chief of Staff, St. Joseph's Hospital

Invocation—The Reverend Joseph Kuncl, Director of Archdiocesan Council of Catholic Nurses, Chaplain of St. Joseph's Hospital

"The Development of Bronchoscopy"—Chevalier L. Jackson, M.D., Professor of Otolaryngology, Temple University, Philadelphia

"Psychiatry and Religion"—Francis J. Braceland, M.D., Psychiatrist-in-Chief, The Institute of Living

"The Discovery of Penicillin"—Sir Alexander Fleming, M.D., Nobel Prize Winner in Medicine

Announcements

Intermission—3:00–3:20 P.M.

"Women in Medicine"—Burgess Lee Gordon, M.D., President, Woman's Medical College, Philadelphia, Pennsylvania

"The Discovery of Cortisone"—Philip S. Hench, M.D., Nobel Prize winner in Medicine, Department of Medicine, Mayo Clinic, Rochester, Minnesota

Evening Activities—7:00 P.M.

Centennial Banquet—Continental Room, Hotel Saint Paul

Toastmaster: The Very Reverend George E. Ryan

Greetings from Civic and Professional Representatives

The State of Minnesota
The City of Saint Paul
American Medical Association
  President Louis H. Bauer, M.D. (tentative)
American College of Surgeons
  President Harold L. Foss, M.D.
American College of Physicians
  President LeRoy H. Sloan, M.D.

Address by The Most Reverend John Gregory Murray, Archbishop of Saint Paul

Morning Services—11:00 A.M.

Solemn Pontifical Mass and Sermon—The Most Reverend John Gregory Murray, Archbishop of Saint Paul, St. Paul Cathedral

Afternoon Program—2:30–3:30 P.M.

St. Joseph's Hospital

"The Place of the Hospital in the Community"—Right Reverend Mngr. C. A. Towell, President of the Catholic Hospital Association

"The Spiritual Concept of Hospital Care"—The Reverend John J. Flanagan, S.J., Executive Director, The Catholic Hospital Association

INTERNATIONAL ACADEMY OF PROCTOLOGY

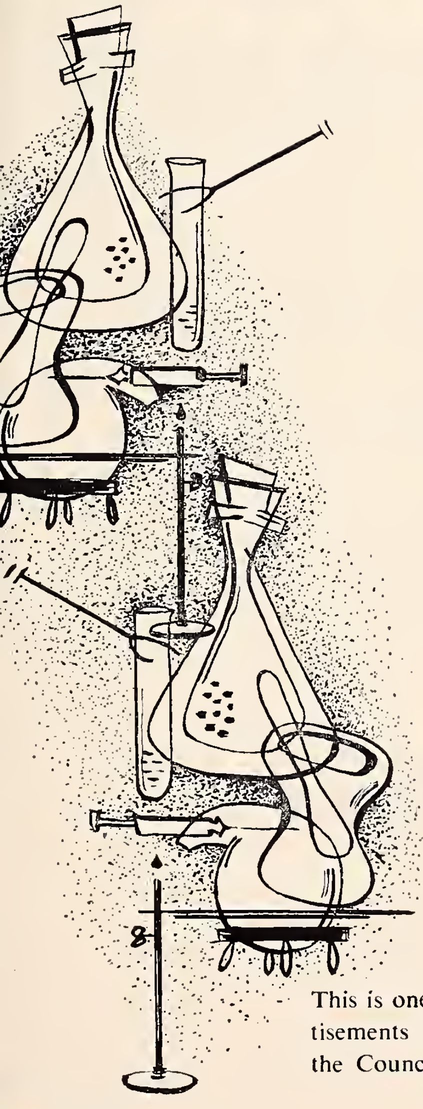
All physicians are cordially invited to attend the Fifth Annual Convention of the International Academy of Proctology to be held at the Plaza Hotel, New York City, May 29, 30 and 31, 1953, directly preceding the American Medical Association meeting. The meeting this year will be extended to include a Surgical Clinic and Seminar at Jersey City Medical Center under the direction of Dr. Earl J. Halligan. The "Wet Clinic" and Seminar will be on May 28. An extensive Motion Picture Seminar of Proctologic Surgery (including office techniques) will be held on May 31. All scientific papers will present the latest developments in proctology and gastroenterology.

Because general practitioners, as well as gastroenterologists and proctologists, face proctologic problems in their daily practice, much of the program has been planned to answer their questions.

There is no fee for attendance at the annual convention of the International Academy of Proctology. These conventions, as well as all other activities of the Academy, are directed toward the further development

(Continued on Page 404)

What is the status of ____?



Many times you have asked yourself, "Is the indicated drug Penicillin . . . Chloramphenicol . . . Aureomycin . . . Sulfadiazine . . . a combination . . . or what?" This same problem may confront you many times . . . not only with the antibiotics—but actually in any specific field where there are numerous drugs . . . and you are faced with the problem of determining which might be the therapy of choice for a given condition.

The need for such clarification has always been apparent to the Council on Pharmacy and Chemistry of the American Medical Association. Its frequent publication of special status reports in The Journal is designed to help answer such questions for you.

Information about new drugs—clinically proved indications . . . experimental uses . . . correct dosages . . . contra-indications . . . and similar facts—is frequently presented by the Council. Its announcements of newly accepted products also help keep you up-to-date on new and useful drugs. These notices which appear in The Journal almost every week can be a definite guide to you in knowing what preparations are Council accepted . . . how they are best used . . . and how they can be most effective in your daily practice.

Insistence on Council accepted products is one reliable guide to clinically tested products.

This is one of a series of advertisements designed to explain the Councils' functions to you.

ACCEPTED COUNCIL ON PHARMACY AND CHEMISTRY AMERICAN MEDICAL ASSOCIATION

ACCEPTED COUNCIL ON PHYSICAL MEDICINE and REHABILITATION AMERICAN MEDICAL ASSOCIATION

ACCEPTED COUNCIL ON FOODS AND NUTRITION AMERICAN MEDICAL ASSOCIATION

ACCEPTED COMMITTEE ON COSMETICS AMERICAN MEDICAL ASSOCIATION

INTERNATIONAL ACADEMY OF PROCTOLOGY

(Continued from Page 402)

of proctology. All physicians interested in proctology are therefore invited and welcomed to the annual meeting.

The program is available upon request to the Executive Offices of the International Academy of Proctology, 43-55 Kissena Blvd., Flushing, New York.

AMERICAN COLLEGE OF ALLERGISTS

The annual conclave of the American College of Allergists will be held this year at the Conrad Hilton Hotel in Chicago, April 24 to 29.

The first four days will be devoted to instruction under the tutelage of recognized authorities and the last three to a discussion and reporting of recent advances in the field of allergy by the investigators themselves. For detailed information write the American College of Allergists, La Salle Building, Minneapolis 2, Minnesota.

NATIONAL GASTROENTEROLOGICAL ASSOCIATION

The National Gastroenterological Association will give its Fifth Annual Course in Postgraduate Gastroenterology at the Hotel Biltmore, Los Angeles, October 15, 16, 17, 1953.

The course will again be under the direction of Dr. Owen H. Wagensteen, Professor of Surgery at the University of Minnesota Medical School, and Dr. I. Snapper, Director of Medical Education at the Cook County Hospital, Chicago. Distinguished faculty members from the medical schools in and around Los Angeles will provide the program.

Further information may be obtained from the National Gastroenterological Association, 1819 Broadway, New York 23, New York.

AMERICAN CONGRESS OF PHYSICAL MEDICINE AND REHABILITATION

The Midwestern Section of the American Congress of Physical Medicine and Rehabilitation will hold its spring meeting at the Center for Continuation Study of the University of Minnesota from 9:30 a.m. to 5 p.m., Friday, May 1, 1953. Physicians are cordially invited to attend. Anyone wishing for further information may obtain it from the secretary, G. K. Stillwell, M.D., 2333 Priscilla St., Saint Paul 8, Minnesota.

INDUSTRIAL MICROBIOLOGY INSTITUTE

The sixth annual Industrial Microbiology Institute will be held at Purdue University, June 22-27, 1953. The program is designed for scientists in industrial plants and others interested in the identification of fungi and the problems of fungus control.

In addition to the usual lectures and laboratory sessions, which are scheduled daily during the mornings

Our Most Sincere Congratulations to all of the Physicians of Minnesota on the occasion of the 100th anniversary of the founding of the

Minnesota State Medical Association

Minnesota Physicians have made phenomenal progress in all branches of medicine, have ministered untiringly to the health and happiness of their fellow men, are appreciated and loved by all, have achieved fame and renown at home and abroad for their Society and their State.

Again we say Congratulations.

PENGELLY X-RAY COMPANY

Uninterrupted service to Physicians and Hospitals of the Northwest since 1914.

X-Ray—Cardiographs—Physical Medicine Equipment

Visit our display

of the

SANBORN

Viso Cardiette and Metabulator

St. Paul Auditorium

SALES

Phone

Sterling 14225

MEDTRONIC

SERVICE

Phone

Sterling 14225

818 Nineteenth Avenue N E.
Minneapolis (18) Minnesota

Electronic Medical Equipment

and afternoons, a series of evening lectures will be given by outstanding specialists in the field of mycology, according to Dr. C. L. Porter, director of the institute.

These speakers include Dr. Virgil G. Lilly, professor of physiology at West Virginia, on "The Influence of Vitamins and Growth Factors on the Growth and Sporulation of Fungi"; Dr. William J. Robbins, director of the New York Botanical Garden, "Inhibition of Bacterial Viruses."

Dr. James G. Horsfall, director of the Connecticut Agricultural Experiment Station, "Fungicide Testing"; Dr. Radcliffe F. Robinson, assistant supervisor of biological research, Battelle Memorial Institute, "The Application of X-Ray Techniques to Industry"; and J. H. Richardson, Armour and Company, Chicago, "Mold Problems of the Food Industry."

The regular laboratory work will include the study of fungus classification, mucorales, ascomycetes, aspergilli, penicillia, actinomycetes, yeasts, and unknown fungi. Students will become sufficiently familiar with the terminology to read mycological literature.

Dr. John S. Karling, head of the department of biological sciences at Purdue, and other staff members will assist in directing the course.

BOARD OF EDUCATION EXAMINATION

Application forms for examination by the Board of Education of the city of New York for the position of School Chief Medical Director may be obtained from Dr. Jacob Greenberg, Associate Superintendent in Charge of Personnel, Room 510, 110 Livingston Street, Brooklyn 1, New York.

A fee of $10.00 is required upon scheduling of the tests. An applicant must be under the maximum age of fifty years, be graduated from an approved medical school or medical college and hold a license to practice medicine in the State of New York, and be certified as a diplomate of the American Board of Internal Medicine. Ten years' experience of approved and appropriate practice, nine months of which shall have been an internship in a hospital approved by the American Medical Association, is required; this experience must include or be supplemented by satisfactory administrative and supervisory experience over a period of two years. (In lieu of these requirements, a candidate may offer five years of experience as School Medical Inspector-Personnel in the public schools of the city of New York under regular license and appointment.

Questions regarding eligibility should be addressed to: Mr. Arthur Klein, Examiner-in-Charge, Board of Examiners, 110 Livingston Street, Brooklyn 1, New York.

FIRST INTERNATIONAL CONVENTION OF X-RAY TECHNICIANS

The First International Convention of X-Ray Technicians will be held in Toronto, Canada, at the Royal York Hotel, June 28 through July 2. The convention is sponsored jointly by The Canadian Society of Radiological

Technicians and The American Society of X-Ray Technicians.

Refresher courses will be offered for two hours each morning. The afternoon sessions will be devoted to joint sessions of the CSRT and ASXT, at which time technical papers and essays will be presented by technicians of both societies and by distinguished radiologists. Two Memorial Lectures will be given—Welch Memorial Lecture (Canadian) by E. A. Petrie, M.D., Director, Department of Radiology, St. Joseph's Hospital, St. John, New Brunswick, Canada; and the Jerman Memorial Lecture (American) by Russell H. Morgan, M.D., Professor of Radiology, The Johns Hopkins University, Baltimore, Maryland.

One need not be a member of either organization to attend. For further information, write Beatrice Hurley, R.T., Registrar, St. Catherine Hospital, East Chicago, Indiana.

CENTRAL ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS

The Central Association of Obstetricians and Gynecologists announces the election of the following officers:

President—W. O. Johnson, M.D., Louisville, Kentucky
President-Elect—Harold C. Mack, M.D., Detroit, Michigan
Vice President—Arthur B. Hunt, M.D., Rochester, Minnesota
Secretary-Treasurer—Harold L. Gainey, M.D., Kansas City, Mo.
Assistant Secretary—Woodard D. Beacham, M.D., New Orleans, La.

These officers will serve until the end of the annual meeting which will be held at the Shamrock Hotel, Houston, Texas, on November 5, 6, and 7, 1953.

The business office of the Central Association of Obstetricians and Gynecologists is located in Suite 602, 116 So. Michigan Avenue, Chicago 3, Illinois. The office of Dr. Harold D. Gainey, Secretary-Treasurer, is located at 4635 Wyandotte Street, Kansas City, Missouri.

MINNESOTA SOCIETY OF NEUROLOGY AND PSYCHIATRY

The regular meeting of the Society was held at the Town and Country Club in Saint Paul, Tuesday evening, March 10, 1953.

The scientific program was as follows: Speech and Hearing Problems in Child Psychiatry Practice

Louis L. Flynn, Jr., M.D.
(inaugural thesis)

The Effect of Iproniazid, a Derivative of Isonicotinic Acid Hydrazide, Upon the Behavior of Long-Term Mental Patients

Gordon R. Kamman, M.D,
John W. Freeman, M.D.
(by invitation)
Rubel J. Lucero, Ph.D.
(by invitation)

E. STARR JUDD LECTURE

The twentieth E. Starr Judd Lectureship will be given by Dr. Charles B. Huggins, Professor of Surgery, University of Chicago, Chicago, Illinois, Thursday evening, May 7, 1953, at 8:15 p.m. in the Amphitheater, Owre Hall (formerly Medical Sciences) sponsored by

MINNESOTA STATE MEDICAL ASSOCIATION

Welcome to Saint Paul

For Your 1953 Convention

HOTEL *Saint Paul* **HOTEL** *Lowry*

the Medical School. Dr. Huggins' subject is "The Endocrinology of Mammary Cancer."

The late E. Starr Judd, an alumnus of the Medical School of the University of Minnesota, established this annual lectureship in Surgery a few years before his death.

MSMA COMMITTEE ON CONSERVATION OF HEARING

This announcement is made to inform physicians that the Committee on Conservation of Hearing is making a survey of Minnesota to determine the incidence of handicapping hearing loss among the residents of the State.

This survey is being made through school and country public health nurses and local health officers. Members of the committee have accepted assignments to conduct this survey as follows:

Dr. John Cameron—Crookston. Counties: Kittson, Roseau, Lake of the Woods, Marshall, Beltrami, Polk, Pennington, Red Lake, Clearwater, Norman, Mahnomen, Hubbard, Cass, Clay, Becker, Wadena, Crow Wing, Wilkin, Ottertail, Traverse, Grant, Douglas.

Dr. Anderson Hilding—Duluth. Counties: Koochiching, St. Louis, Lake, Cook, Itasca, Aitkin, Carlton, Pine, Kanabec.

Dr. Charles E. Connor—Saint Paul. Counties: Isanti, Chisago, Washington, Ramsey, Dakota.

Dr. Conrad J. Holmberg—Minneapolis. Counties: Wright, Anoka, Hennepin, Carver, Scott.

Dr. Joseph Gaida—Saint Cloud. Counties: Big Stone, Lac Qui Parle, Yellow Medicine, Chippewa, Swift, Stevens, Pope, Renville, Kandiyohi, Stearns, Todd, Morrison, Mille Lacs, Benton, Sherburne, Meeker, McLeod, Sibley.

Dr. J. Donald Sjoding—Mankato. Counties: Rock, Pipestone, Lincoln, Nobles, Murray, Lyon, Redwood, Cottonwood, Jackson, Martin, Watonwan, Brown, Nicollet, Blue Earth, Le Sueur.

Dr. Kinsey Simonton—Rochester. Counties: Rice, Goodhue, Wabasha, Waseca, Steele, Dodge, Olmsted, Winona, Faribault, Freeborn, Mower, Fillmore, Houston.

The Committee is preparing a pamphlet that will supply factual information regarding the status of such therapy as radium treatment, the fenestration operation, dental treatment designed to open the bite, et cetera. Statements will also be included regarding the role of the hearing aid and speech reading in the rehabilitation of those who cannot be helped by medical or surgical means. This information will be available without charge for those requesting it.

Lawrence R. Boies, M.D.
Chairman

CONTINUATION COURSES

The University of Minnesota will present a continuation course in *Radiology for General Physicians* May 21 to 23, 1953, under the direction of Dr. Leo G. Rigler, Professor and Head, Department of Radiology. Registrants for the course will spend most of their time in the University Hospital Department of Radiology reading films and carrying out procedures in association with

University of Minnesota

Nursing and College

A FASCINATING CAREER!

Students! The Nursing Programs of the University of Minnesota offer you a wonderful chance to combine a good college education with sound practical experience. For a professional or practical nursing career, for part-time nursing, and as excellent preparation for running a home and raising a family, you'll find nurses' training will be useful all your life.

Programs of the University of Minnesota School of Nursing

1. Professional Basic program prepares you for responsible positions in leading hospitals and other health agencies. B.S. degree awarded. 16 quarter program, start Pre-Nursing Courses any quarter. Admission to School of Nursing fall and spring quarters.

2. Advanced Programs prepare graduates to be clinical specialists, teachers, administrators.

3. Practical Nursing Programs qualify you for practical nursing positions in 4 to 6 quarters. You'll want to investigate the possibilities of these programs fully.

Write for further information to Miss Katharine J. Densford, Director, University School of Nursing, Minneapolis 14, Minnesota.

University of Minnesota School of Nursing

members of the faculty of that department. A minimum of didactic material will be presented. Because of the nature of this course, registration will be strictly limited. Early application is therefore suggested. Accommodations will be available in the Center for Continuation Study as usual.

* * *

Electrocardiography will be the subject of a continuation course for general physicians which will be presented by the University of Minnesota next June 8 to 12. Emphasis will be placed on practical experience in the interpretation of electrocardiograms. Each registrant will have an opportunity to read approximately 200 tracings under the supervision of the teaching staff. Separate sessions are being planned for those who consider themselves "beginners" in electrocardiography. The faculty for the course will consist of members of the staff of University of Minnesota Medical School and the Mayo Foundation.

POSTGRADUATE CANCER AND HEART DISEASE SEMINARS

Two postgraduate seminars on cancer and heart disease are scheduled for the physicians in the western part of Minnesota this spring. One seminar will be held in Marshall on March 31. Seven Tuesday evening sessions extending through May 12, are alternately scheduled for the Minnesota Cafe and the New Atlantic Hotel, in Marshall.

In Morris, the site of the second seminar, six sessions will be held in the Stevens County Hospital beginning April 8.

All physicians in these areas are invited to attend. The meetings will be interesting and profitable. There is no fee for the series of lectures.

Both Marshall and Morris seminars are sponsored by the Minnesota Department of Health, Minnesota Medical Association, University of Minnesota, Minnesota Cancer Society and the Minnesota Heart Association in conjunction with the Lyon and Lincoln County Medical Society and the West Central Minnesota Medical Society, respectively.

FAMILY DOCTORS' DAYS

The first in a series of *Family Doctors' Days* will be presented at the University of Minnesota Hospitals, April 29. The members of the Medical School faculty are eager to have as many physicians as possible attend this program for they look forward to the opportunity of exchanging ideas and problems.

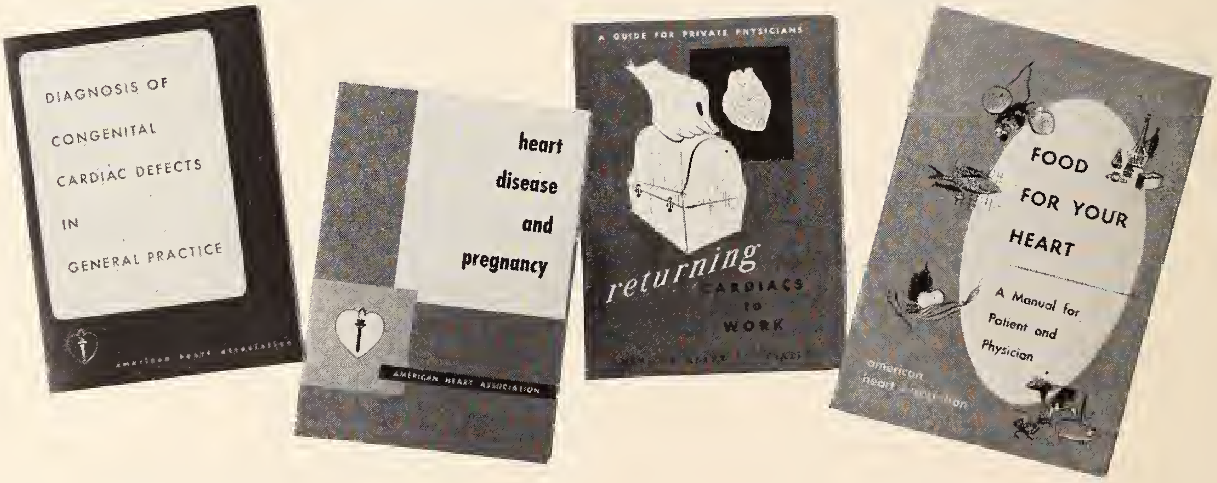
The April 29 program will be a very informal one presented by the Department of Medicine and will feature the following:

12:00 noon	Luncheon with Department of Medicine staff	
2:00 p.m.	Antibiotics in Medical Practice	W. W. Spink
3:00 p.m.	Ward Rounds	C. J. Watson
4:30 p.m.	Clinical-Pathological Conference	C. J. Watson and staff

All physicians are invited to attend.

NOW AVAILABLE to the MINNESOTA PHYSICIAN and His Cardiac Patients

FOUR NEW PUBLICATIONS


DIAGNOSIS OF CONGENITAL CARDIAC DEFECTS IN GENERAL PRACTICE
american heart association
heart disease and pregnancy
AMERICAN HEART ASSOCIATION
A GUIDE FOR PRIVATE PHYSICIANS
returning CARDIACS to WORK
FOOD FOR YOUR HEART
A Manual for Patient and Physician
american heart association

"These brochures are simply and clearly written. 'Food For Your Heart' is excellent and has workable recipes. 'Heart Disease and Pregnancy' is for the patient and easy to follow. I especially recommend 'Diagnosis of Congenital Cardiac Defects in General Practice'."—C. N. Hensel, M.D., *Secretary, Minnesota Heart Association.*

Send requests to:

MINNESOTA HEART ASSOCIATION, INC., 532 Endicott-on-4th, St. Paul 1, Minn.

Minnesota Doctors!

The Patterson Surgical Supply Company welcomes you to Saint Paul and the One Hundredth Anniversary Session of the Minnesota State Medical Association.

Our store is conveniently located at 130 West Seventh Street, one-half block from the Saint Paul Auditorium. We hope you will make it your headquarters during the meeting.

Patterson Surgical Supply Company

130 West Seventh Street
Saint Paul, Minnesota

Tel. Cedar 1781

STEELE COUNTY MEDICAL SOCIETY

At the annual meeting of the Steele County Medical Society, Dr. R. J. Wilkowske was elected president; Dr. J. A. McIntyre, vice president, and Dr. J. F. Schaefer, secretary-treasurer. Dr. E. Q. Ertel, Ellendale; Dr. C. T. McEnaney and A. J. Olson, of Owatonna, were named censors. Dr. C. Lundquist, of Owatonna, was elected delegate to the annual convention of the Minnesota State Medical Association, with Dr. T. W. Stransky, of Owatonna, as alternate.

"YOUR DOCTOR" FILM

In 1952 more than 20 million theater goers in the United States and Canada saw a movie entitled "Your Doctor," which was produced by Louis de Rochemont with the assistance of the AMA. This film is valuable as a Public Relations activity to be sponsored by county or state medical associations. Society PR committees or Medical Auxiliaries may purchase the film and loan it to local groups or commercial theaters, or they may obtain the film from Modern Talking Picture Service, Inc., at the nearest distribution center by paying postage and insurance charges only. The nearest distributor in Minnesota is Mr. A. C. Holmgren, Elliott Film Company, 1110 Nicollet Avenue, Minneapolis.

PR committees of medical societies can contact local movie houses and use all facilities of the society to build an audience. Promotional aids in publicizing the movie may be obtained from the AMA.

COMPLETE OPHTHALMIC SERVICE FOR THE PROFESSION

Complete Laboratories in Minneapolis and Principal Cities of Upper Midwest

EXECUTIVE OFFICES
MINNEAPOLIS, MINN.

SINCE 1913

Benson
OPTICAL COMPANY

Woman's Auxiliary

PLANS COMPLETE FOR 31ST ANNUAL MEETING

Mrs. C. L. Sheedy, President

The Woman's Auxiliary to the Minnesota State Medical Association will hold its thirty-first annual meeting on May 18, 19 and 20, in conjunction with the 100th Anniversary meeting of the Minnesota State Medical Association on those dates in Saint Paul, where an interesting program is planned.

The meeting will begin with registration at 9:00 a.m. each morning. Auxiliary headquarters will be the Hotel Lowry.

The Executive Board meeting will begin at 10:30 a.m., Monday, May 18, at the Minnesota Club, with a luncheon following at 12:30 p.m. The annual tea, held in honor of state officers, will begin at 3:30 p.m. at the International Institute, where refreshments of many national origins will be served.

The annual business meeting, open to all members of the Auxiliary, is scheduled for 10:00 a.m., Tuesday, May 19, and will take place in the Fiesta room of the Hotel Lowry. The annual luncheon for all members is to be held at 1:00 p.m. in the Terrace, Hotel Lowry. Dr. Gordon R. Kamman, Associate Professor of Nervous and Mental Diseases, University of Minnesota, and Deputy Commissioner of Mental Health for the State of Minnesota, will speak on "Minnesota's Mental Health Program." Installation of officers and presentation of the new Auxiliary president, will follow. All board members will attend the post-convention board meeting following this meeting.

The annual breakfast for all Auxiliary members will be held on Wednesday morning, May 20.

Your president would like to take this opportunity to urge you to make plans now to attend this important Auxiliary meeting. It offers a chance to become better acquainted with Auxiliary procedures and gives doctors' wives from throughout the state a chance to take part in all vital discussions and decisions made at the convention. Please remember the dates May 18, 19 and 20. Your program will be sent you in advance of the meeting and will include a reservation card so you may make arrangements for attending events at the thirty-first annual convention.

FREEBORN AUXILIARY AIDS CIVIL DEFENSE

Members of the Freeborn County Medical Auxiliary are devoting time to training and aid in the civilian defense program. Many members are taking the home nursing course offered by the Civil Defense department. Mrs. R. F. Schmidt, an Auxiliary member, will teach this home nursing training course.

This action was taken at the February meeting of the auxiliary. Members met at the home of Dr. J. P. Person, and were shown two civil defense films by Judge Norris Peterson. The films dealt with biological warfare and atomic attack.

Other activities of the Freeborn auxiliary include cooperation in the Red Cross blood program, aiding in the hospital shop and interesting girls in the student nurse program.

Distributors to the profession

of fine

Injectable Vitamins and Endocrines

Interstate Pharmacal Company

P.O. Box 252 Beloit, Wis.

MAIL ORDERS SHIPPED IMMEDIATELY

The Birches Sanitarium, Inc.

2391 Woodland Avenue
Duluth 3, Minnesota

A hospital for the care and treatment of Nervous and Mental disorders. Quiet, cheerful environment. Specially trained personnel. Recreational and occupational therapy.

Dr. L. R. Gowan, M.D., M.S., Medical Director

Crestview Hospital
SAINT PAUL

A non-profit organization

Occupational therapy department.

CRESTVIEW
NEUROPSYCHIATRIC
HOSPITAL
145 W. College Ave. . . . GArfield 5841
SAINT PAUL, MINNESOTA
Highest standard of service and facilities for over 15 years.

The only non-profit specialized hospital in St. Paul devoted exclusively to the treatment and care of neuro-psychiatric patients.

Ultra modern facilities and comforts at the lowest cost to patients.

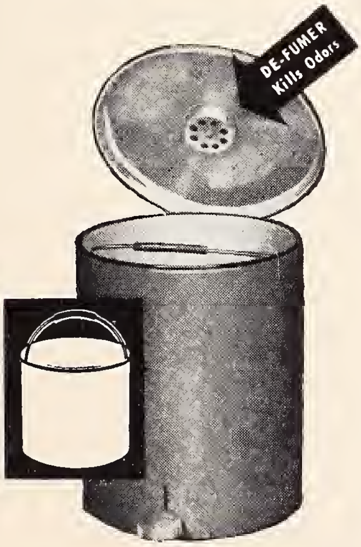
- Occupational therapy and recreational department.
- Complete X-ray- and- laboratory.
- Electrocardiography — basal metabolism.
- Electroencephalography available.
- All patients rooms air-conditioned.
- Background music and psychotherapy sound equipment.
- Medically staffed by every neurologist and psychiatrist in St. Paul.
- Especially trained nursing staff.

MEMBER of the American Hospital Association

MEMBER of the Minnesota Hospital Association

APPROVED by the Minnesota State Medical Association and the Ramsey County Medical Society.

Send for photo brochure and rate schedule.



SPECIAL . . .

ONLY $9.95

Entirely chrome plated
WASTE RECEPTACLES with
porcelain enamel removable
inner pail, 12 quart size.

C. F. ANDERSON CO., Inc.
Phone: ATlantic 6508
901 Marquette Avenue
Minneapolis, Minn.

In Memoriam

WILLIAM ALBERTUS COVENTRY
1876-1953

On February 8, 1953, in Duluth, death took from our roster, a man of unusual devotion to our guild. It is impossible to do justice to his attainment within the limits of this record. W. A. Coventry came to Duluth just at the turn of the century. For over fifty years he was recognized as a standard bearer of all that is best in medicine in that challenging period. The great era of machines and mass production economy was on the way, not to mention two overwhelming world wars that put our social and economic structure to every possible test. It was to witness the gifts of science to medicine, marvelously increasing the range of the doctor's services, the while his personal prestige as a miracle man lessened because, as a patient recovering from pneumonia could say, "It was the penicillin that turned the trick."

A review of W. A. Coventry's life shows to what an unusual extent he was able to become a part of the leadership so important to our administrative and scientific departments and societies. In his long life, he illustrated the necessary adaptation of the profession to a great increase in medical specialties; to the expansion of our hospitals and the proportion of medical work done in offices and clinics. Social and economic trends, with the great depression of the early thirties, led to a great extension in medical relief. W. A. Coventry gave much time and thought to plans for meeting this exigency. The difficulties involved were such that much that had to be done could not be done by mass action, as for instance, in the prevention and treatment of acute transitory disorders. The profession of medicine had to accommodate to handling chronic disorders and disabilities with the aging factor ever in the ascendency.

It was this background that brought out in W. A. Coventry his great usefulness to our profession, through his unlimited fund of energy and judicious guidance. He was also willing to enter with avidity into the work of many non-medical groups and associations, that developed confidence in doctors as citizens and leaders, without which public health efforts would have been long delayed. He had also good business judgment and served on the directorate of The Northern National Bank in Duluth for many years, as well as on several other business enterprises. It is fitting to review briefly a few of the sequences and attainments in the life of W. A. Coventry that portray the sources of his type of leadership that invites emulation.

William Coventry was born in Brainerd, September 17, 1876. His father was a Northern Pacific Railroad engineer. The family later transferred to Duluth where William finished high school and made his future educational goal the University of Michigan, from which he graduated in Medicine in 1900. For one year he interned under the late well-known Walter Courtney, Chief Surgeon of the Northern Pacific Railway, at Brainerd. After a year, he joined another Michigan graduate, the late Dr. A. J. Braden, in a general and railroad practice in the Duluth West End. Doctor Braden was a meticulous surgeon, never sparing himself, and was responsible for some of the earliest and best development of hospitals in Duluth. His young associate found the elder man a tough taskmaster, but he was taught how to work, and to use his time and faculties most effectively. For example, he was introduced to a very heavy obstetrical practice in that rapidly growing and expanding portion of Duluth. In the course of his professional life, it was estimated that he brought into the world over 5200 babies! This early experience laid the foundation for his ultimate specialization in Obstetrics and Gynecology. To prepare for this, he spent part of 1910 and 1911 in graduate study in Vienna and Dublin. In later years, he made frequent visits to the various lying-in hospitals in our own country. At one time, he became quite familiar and skilled in the techniques of the famous Doctor Potter, of Buffalo, New York, who popularized his own method of obstetrical version. This limited field of Obstetrics and Gynecology was never sufficient, however, to demand all of Doctor Coventry's time or talents. He was very active in the early development of the American College of Surgeons; and in 1940 was a member of the Board of Governors.

Doctor Coventry made the expansion and development of Duluth's two major hospitals, St. Mary's and St. Luke's, one of his favorite labors. In 1951, he received from St. Mary's Hospital an illuminated scroll, commemorating this well-earned recognition for his teaching, his interest in staff meetings, pathological conferences and everything that pertained to wholesome staff organization. He served both hospitals, on occasion, as Chief of Staff. It was inevitable that anyone with his dynamic personality and willingness to serve should have fastened upon him such offices and appointments as the presidency of the St. Louis County Medical Society and then of the Minnesota State Medical Association. He also served as an active member of the Council of the State Medical Association and for one year was its chairman. He allocated much time to assisting in the organization and directing of the work of the Blue Cross, and later the Blue Shield. As to attending his official committee duties, he was no attendant by proxy. He seemed tireless in terms of travel. In that respect he shared the enthusiasm of such men as the late W. L. Burnap, of Fergus Falls, and of Bert Adams, still active in Hibbing, Minnesota. Between these men and a few others of their type, the naturally segregated northern portion of Minnesota was able to keep its medical needs adequately represented in the medical councils of the state.

Doctor Coventry extended his public service in civic affairs to many organizations, including the Duluth

North Shore Health Resort

Winnetka, Illinois

on the Shores of Lake Michigan

A completely equipped sanitarium for the care of
nervous and mental disorders, alcoholism and drug addiction
offering all forms of treatment, including electric shock.

SAMUEL LIEBMAN, M.S., M.D.
225 Sheridan Road **Medical Director** **Phone Winnetka 6-0211**

Chamber of Commerce, the Duluth Kiwanis Club, the Arrowhead Association and the Masonic Order. In all of these, he had official recognition. The 1949 Duluth Hall of Fame Award was given him with particular attention drawn to his medical guidance of The St. Louis County Welfare Board in the crucial period following the depression of the early thirties.

Doctor Coventry saw every advantage in working together with his fellow practitioners to make his home area a safe place in which to be sick. That was the keynote of his interest in the societies in which he had membership and in their various local and national meetings. He took his membership seriously. He was the best of listeners and aimed to miss nothing of tangible value. Staff conferences were never a drudgery, whether he was on the program or not. He enjoyed his position as one of the Minnesota delegates to the AMA, and his advice was often sought. He fell naturally into the spirit of co-operative enterprize, which led him to join with some others, as a founder of the association known as the Duluth Clinic in 1916. It was not easy for him either to write for publication or to speak extemporaneously. Therefore, much that he gave to the various organizations mentioned in the way of public service was worked out the hard way. It came entirely out of his brave and earnest heart and from his total integrity and honesty.

Doctor Coventry's first wife, the mother of his four children, fell a victim to influenza in 1918. He is survived by his present wife, Anna S., two sons and two daughters. Both sons are in the field of medicine: Dr. William D., an internist of Duluth, and Dr. Markham in Orthopedics at the Mayo Clinic, Rochester, Minnesota. The daughters, Mrs. John M. Harlow and Mrs. Frederick Norton, live in Tucson, Arizona, and El Paso, Texas, respectively. He is also survived by two sisters and a brother.

His life was characterized by tolerance. It has been said that it is well that but few men become leaders, because the attainment breeds aggressiveness, and with it, distasteful intolerance.

E.L.T.

FRANK P. FRISCH

Dr. Frank P. Frisch of Willmar, Minnesota, died March 8, 1953, of a heart attack.

Dr. Frisch was born in St. James, Minnesota, on April 27, 1884. He obtained his medical degree from the University of Minnesota in 1914 and interned at the University Hospital in Minneapolis.

He practiced at Kimball, Minnesota, from 1915 to 1917 and at Gibbon, Minnesota, from 1919 to 1923. In 1924, he took postgraduate work at the New York Postgraduate School. From 1925 to 1928, he practiced at Bismarck, North Dakota. From there he moved to Willmar.

Dr. Frisch was a member of the Minnesota Academy of Otolaryngology and Ophthalmology and of the American College of Surgeons. He was a member of the Kandyohi-Swift-Meeker County Medical Society and of the Minnesota State Medical Association and the American Medical Association.

SEVERIN HERMAN KOOP

Dr. Severin H. Koop of Richmond, Minnesota, died on February 5, 1953, at the University Hospital in Minneapolis.

Dr. Koop was born at Brainerd, June 24, 1898. He received his medical degree from the University of Minnesota in 1926 and interned at St. Mary's Hospital, Minneapolis, and in the hospital of the same name, Duluth, after which he became superintendent of the Richmond Hospital.

In 1927, Dr. Koop was married to Helen Beatrice Sehl. His widow and six children survive him.

Dr. Koop was a member of the Stearns-Benton County Medical Society, the Minnesota State Medical Association, the American Medical Association, the Midwest Hospital Association, and the American Academy of General Practice.

JOHN SILLIMAN MACHIE

Dr. John D. Gilbert of Carlton, Minnesota, died January 20, 1953, at the age of eighty-eight.

Dr. Gilbert was born July 5, 1864, in Stratford, Connecticut. He obtained his M.D. degree from the College of Physicians and Surgeons in Chicago in 1890 and moved to Carlton from Fond du Lac, Wisconsin, in 1909.

Dr. Gilbert practiced at Carlton until 1942 but continued to be the village health officer until 1949. He had been residing at the home of Mr. and Mrs. Roy Nordstrom since 1946.

RUSSELL JAMES MOE

Dr. Russell J. Moe, of Duluth, died on March 8, 1953, following a long illness.

Dr. Moe was born at St. James, Minnesota, April 21, 1902. He studied medicine at the University of Minnesota where he graduated in 1928. After interning at St. Luke's Hospital, Duluth, he took postgraduate work at the New York Lying-In Hospital and at the Washington University Medical School at St. Louis.

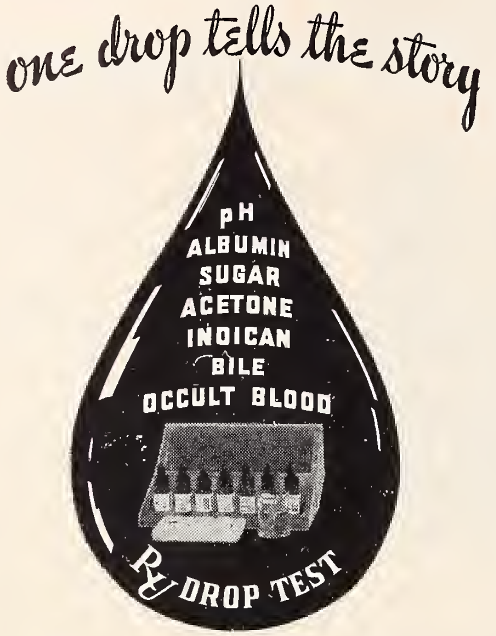
Dr. Moe was a member of the St. Louis County Medical Society, the Minnesota State Medical Association and the American Medical Association. He was also a member of the Interurban Academy of Medicine, the Minnesota Society of Obstetrics and Gynecology, the Central Association of Obstetrics and Gynecology and the Minnesota Surgical Society, of which he was a past president.

Dr. Moe is survived by his wife, Virginia Palmer Moe, three sons and a daughter.

EDWARD MOREN

Dr. Edward Moren of Duluth, Minnesota, who formerly practiced surgery in Minneapolis, died February 27, 1953, at the age of seventy-seven.

Dr. Moren was born at Anoka, Minnesota, June 18, 1876. He graduated from the University of Minnesota Medical School in 1906 and interned at the Minneapolis



by simply adding ONE drop of urine to ONE drop of reagent, Ru Drop Test offers a clinically accurate method . . . Unconditionally Guaranteed . . . for the complete chemical screening of all urines by One Uniform Procedure in ONE MINUTE. A comprehensive brochure on One Minute Ru Test is available at your request

**ORGO PRODUCTS COMPANY
WALTERIA, CALIFORNIA**

Cook County Graduate School of Medicine

POSTGRADUATE COURSES—1953

SURGERY—Intensive Course in Surgical Technic, two weeks, starting April 13, April 27, May 11.
Surgical Technic, Surgical Anatomy and Clinical Surgery, four weeks, starting June 1.
Surgical Anatomy and Clinical Surgery, two weeks, starting June 15, August 17.
Gallbladder Surgery, ten hours, starting April 20.
Surgery of Colon and Rectum, one week, starting April 13.
General Surgery, one week starting May 4.
General Surgery, two weeks, starting April 20.
Thoracic Surgery, one week, starting June 8.
Breast and Thyroid Surgery, one week, starting June 22.
Esophageal Surgery, one week, starting June 22.
Fractures and Traumatic Surgery, two weeks, starting June 15.
GYNECOLOGY—Intensive Course, two weeks, starting April 20.
Vaginal Approach to Pelvic Surgery, one week, starting May 4.
OBSTETRICS—Intensive Course, two weeks, starting June 8.
PEDIATRICS—Congenital Heart Disease, two weeks, starting May 18.
Cerebral Palsy, two weeks, starting June 15.
MEDICINE—Intensive General Course, two weeks, starting May 4.
Electrocardiography and Heart Disease, two weeks, starting July 13.
Allergy, one month and six months, by appointment.
CYSTOSCOPY—Ten-day Practical Course starting every two weeks.
DERMATOLOGY—Intensive Course, two weeks, starting May 11.

TEACHING FACULTY—ATTENDING STAFF OF COOK COUNTY HOSPITAL

ADDRESS: REGISTRAR, 707 South Wood Street, Chicago 12, Illinois

VALLEYVIEW
Hospital and Sanitarium
Jordan, Minnesota
PHONE 254

Located conveniently 22 miles southwest of Edina near paved state highway 169.

Offers unique advantages for the longer term care of nonacute illnesses including geriatric disorders.

Twin Cities Phone
Bridgeport 2119

General Hospital. He took postgraduate work in surgery in Vienna from August, 1912 to August, 1913 and was Clinical Assistant Professor of Surgery at the University of Minnesota and Assistant Chief Surgeon at Minneapolis General Hospital. At one time he served as Chief of Staff at the Swedish Hospital in Minneapolis.

Dr. Moren was a member of the Hennepin County Medical Society, the Minnesota State Medical Association, and the American Medical Association. He was also a fellow of the American College of Surgeons. He is survived by four daughters: Mrs. W. F. Johnson, Duluth; Mrs. Willard Stout, Los Angeles; Mrs. John Rothermel, Great Falls, Montana, and Mrs. George Fahlstrom, Buffalo, New York.

WALTER EARL RICHARDSON

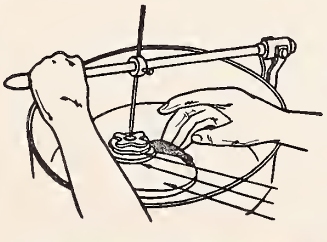
Dr. W. E. Richardson died in Saint Paul, February 7, 1953. He had made Saint Paul his home for several years after practicing medicine in Minnesota and South Dakota for more than fifty years.

Dr. Richardson was born in Elgin, Minnesota, July 15, 1872. He graduated from Rush Medical College in 1896. He practiced for two years under Dr. G. J. Moe at Heron Lake, Minnesota. He practiced at Slayton, Minnesota, for twenty-one years until 1919 and, in 1913, founded the Murray County Hospital in that city. He practiced at Pipestone, Minnesota, from 1919 until December 1, 1931, and during that period was Commander of the American Legion Post of Pipestone. He then practiced at Philip, South Dakota, where he remained for six years. He retired in Rushford, Minnesota, in 1946 after practicing there eight years. During World War I, he was attached to Base Hospital 99 in the A.E.F.

Dr. Richardson was a one-time member of the Olmsted-Houston-Fillmore-Dodge County Society, the Minnesota State Medical Association and the American Medical Association.

Dr. Richardson is survived by his wife, Fatima; a daughter, Mrs. F. C. Eustis of Saint Paul; three sons, Walter W., Superintendent of Schools in North Saint Paul; William H. of Jasper, Minnesota, and Dr. Robert J. of Saint Paul.

UNUSUAL LENS GRINDING



CATARACT, MYO-THIN
and other difficult and complicated lenses are ground to extreme thinness and accuracy by our expert workmen.

ARTHUR F. WILLIAMS
SAINT PAUL
MINNESOTA

Of General Interest

Dr. Wesley W. Spink of the University of Minnesota Medical School delivered the Twenty-ninth Annual James Anders Lecture before the College of Physicians of Philadelphia, April 1.

* * *

Dr. E. A. Boyden, Professor of Anatomy at the University of Minnesota, addressed the opening session of the two-day course in Pathologic Physiology of the Lung, held in St. Louis, March 31, in conjunction with the annual meeting of the American Association of Pathologists and Bacteriologists.

* * *

Dr. Reynold A. Jensen, Professor of Pediatrics at the University of Minnesota, recently participated in a Postgraduate Assembly in Omaha, speaking on the subject, "The General Principles of Child Psychology." He also served in a panel discussion on child behavior.

* * *

Dr. N. M. Mensheha, a native of Ukraine, now an American citizen and a practicing physician in Forest Lake, spoke at the Forest Lake Township Farm Bureau monthly meeting, March 3. Dr. Mensheha described life in a a communist state.

* * *

Dr. Howard L. Horns, assistant dean of the University of Minnesota Medical School, was recalled to active duty with the Army Medical Corps, March 17. **Dr. William F. Maloney,** medical fellow, is serving as acting assistant dean during Dr. Horn's leave of absence.

Dr. Horns is the second member of the medical school staff to be activated since January 1. **Dr. Richard M. Magraw,** assistant professor of psychiatry and medicine, was recalled to active service in January.

* * *

Dr. John B. Sanford, recently returned from army medical service in Korea, spoke on conditions in Korea to the members of the St. Louis County Medical Society at the regular meeting, held March 12, at St. Mary's Hospital, Duluth.

* * *

Mrs. Roy Good, mother of the three Drs. Good—**Dr. Roy H., Dr. Thomas A.,** and **Dr. Robert A.,** all of Minneapolis—was chosen Mother of the Year for Minnesota. Mrs. Good, a Minneapolis elementary school teacher, was widowed twenty-nine years ago. Besides her three sons in the medical profession, another son, Charles, is working for his Ph.D. in psychology at the University of Minnesota.

* * *

Dr. J. F. DuBois was named Sauk Centre's "Citizen of the Year" March 10. He was awarded a plaque by the Sauk Centre Chamber of Commerce and his photograph will be hung in a special gallery in the city hall. Dr. DuBois is secretary of the State Board of Medical Examiners; in 1948 he was president of the National Federation of Medical Licensure, and in 1950 became the first Minnesotan named to the National Board of Medical Examiners. Dr. DuBois has always been active in local civic affairs until last year when he suffered a stroke and has been in retirement from his medical practice..

* * *

Dr. H. Herman Young, Mayo Clinic surgeon, showed colored slides of accident victims who have been treated at the Mayo Clinic, at a Farm and Home Safety Institute held at the Albert Lea High School, March 19.

* * *

Dr. J. M. Gacusana, recently from Hot Springs, South Dakota, opened a practice in Mahnomen, March 6.

* * *

Two former Saint Paul doctors—**Dr. Paul B. Magnuson,** secretary of the American College of Surgeons and former chief medical director of the Veterans Administration, and **Dr. Dean A. Clark,** general director of Massachusetts General Hospital—took part in a two-day forum at the annual meeting of the National Health Council, held in New York City, March 19 and 20.

* * *

Dr. M. H. Larson, who has been operating the hospital in Nicollet, began practice in Lake Benton in the new clinic there, April 1.

* * *

Dr. Bernard Street and **Dr. A. M. Nielsen,** of Northfield, broadcast over local station, KDHL, February 13 and 17, emphasizing the need for blood donors contributing during the visit of the Red Cross mobile blood bank unit.

* * *

Dr. M. H. Bauer, of Winthrop, was re-elected chairman of the Sibley County Nursing Advisory Board at the annual meeting held February 3 in the courthouse.

* * *

Dr. Traugott J. Bloedel, of the Osseo Clinic, assisted with the immunization program in the public and parochial schools at Dayton, February 5.

* * *

Dr. Frederic Kottke, of the University of Minnesota Hospitals, was guest speaker at the annual meeting of the Isanti County Public Health Nursing Service, held February 11, in the Lutheran Church at Braham. Dr. Kottke presented a lecture on rehabilitation of patients sufferisg from crippling diseases such as arthritis, polio and spastic palsey. **Dr. S. G. Johnson,** of Isanti, presided over the meeting.

* * *

Dr. William C. Bernstein, clinical professor of surgery at the University of Minnesota Medical

A COMPELLING ARGUMENT

for the purchase of

MUNICIPAL BONDS NOW

Municipal Bonds are now paying the highest rate of interest since 1940.

IF YOU PAY TAXES ON	and YOU BUY A MUNICIPAL BOND THAT PAYS	it is EQUIVALENT TO TAXABLE INCOME THAT PAYS*
$ 6,000-$ 8,000	3.50%	5.30%
10,000- 12,000	3.50%	6.00%
14,000- 16,000	3.50%	7.45%
18,000- 20,000	3.50%	8.50%

*Under current Federal Income Tax rates and provisions.

We are now offering Municipal Bonds that pay you from 3% to 4%. There has never been a Federal Income Tax on income received from Municipal Bonds.

CAN YOU AFFORD TO BE WITHOUT MUNICIPAL BONDS?

JURAN & MOODY

MUNICIPAL SECURITIES EXCLUSIVELY

TELEPHONES:
GArfield 9661
Prior 6423

93 E. SIXTH STREET
ST. PAUL 1, MINNESOTA

School, and **Dr. Reynold Jensen,** University of Minnesota, child psychiatrist, were the guest speakers at the last two seminar meetings of the Blue Earth Valley Medical Association. Dr. Bernstein, speaking at the February 12 meeting, dealt with the topic of cancer of the rectum and colon. Dr. Jensen, who spoke at the February 27 meeting, spoke on "The Psychiatric Aspects of Growing Children."

* * *

Dr. Orianna McDaniel, a woman pioneer in the medical field, has behind her fifty years of service with the Minnesota State Health Department. Dr. McDaniel earned her medical degree at the University of Michigan and came to Minneapolis in 1894 to intern at Northwestern Hospital, one of the few hospitals in the country that would accept a woman doctor in those days. Two years later she joined the Health Department. In 1907 Dr. McDaniel organized and headed the department's Pasteur Institute but by 1921 a new process for the treatment of rabies was developed so that local doctors could care for rabies patients, and the institute was abandoned. During World War I, Dr. McDaniel became acting director of the state's Division of Preventable Diseases, while Dr. A. J. Chesley, director, was in military service. She remained as head of the division under Dr. Chesley, ustil her retirement at the age of seventy-three years.

RECENT DENTAL LITERATURE ADVOCATES BAN ON THUMB SUCKING AND NAIL BITING

Cast from a children's dental clinic showing malocclusion due to thumb sucking

Authorities show developmental defects in dental occlusion when vicious habits are not treated. Children and adults alike are subject to these injurious mouth habits. Nagging and rebuke are psychologically unsound and serve only to focus attention on the habit. For efficient treatment on a reflex basis, prescribe

Contains: Olea Resin Capsicum, Aloe, Benzoin, Storax, Tolu Balsam, Soluble Pyroxylin and Alcohol 4.75%

BAN

ADVERTISED IN AMERICAN MEDICAL ASSOCIATION PUBLICATIONS

Order from your pharmacist

Professional samples available. WRITE TO:

PUREPAC CORPORATION
511 East 72nd Street • New York 21

AT YOUR CONVENIENCE, DOCTOR . . .

you are cordially invited to visit our new and modern prescription pharmacy located on the street floor of the Foshay Tower, 100 South Ninth Street.

With our expanded facilities we will be able to increase and extend the service we have been privileged to perform for the medical profession over the past years.

Exclusive Prescription Pharmacy

Biologicals Pharmaceuticals Dressings
Surgical Instruments Rubber Sundries

JOSEPH E. DAHL CO.
(Two Locations)
100 South Ninth Street, LaSalle Medical Bldg.
ATlantic 5445 Minneapolis

Dr. George Penn, of Mankato, was guest speaker at the February meeting of the Women's Auxiliary of Immanuel Hospital. Dr. Penn talked on, "Obstetrics and the New Hospital," showing drawings of the plans for the new obstetrics wing which is soon to be completed.

* * *

Dr. H. L. Smith, retired after twenty-seven years in the cardiology department of the Mayo Clinic, entered the printing and publishing business by purchasing the *Mantorville Express*, a weekly almost as old as Minnesota itself, recently. Dr. James Eckman, (Ph.D) associated with the publications department of the clinic, has been unofficially designated the technical adviser.

Switching from medicine to print and make-up for Dr. Smith is just a fulfillment of his hobby. During his years at the clinic, Dr. Smith spent many hours of spare time working in his basement print shop at a hobby that took him away from his work. He often collaborated with Dr. Eckman on printing projects. Dr. Eckman has made a hobby of type collecting as well as printing. He now owns some 300 cases of various type faces from many parts of the world. Some of his type dates back to 1690.

The *Mantorville Express* was founded in 1857 by John E. Bancroft who carted his outfit across the plains by ox team. The fortunes of the paper have paralleled those of the Dodge County seat which it served. As the town gradually lost its place, the paper dwindled in importance, circulation and income. However, the town people would not let their paper die entirely and up to November, 1952, it was operated as a co-operative project, being leased to various printers to operate. L. W. Jensen, who was currently leasing the paper, will continue as editor under the new publisher, Dr. Smith.

* * *

Dr. Earl Bigler was elected president of the Perham Chamber of Commerce recently. Dr. Bigler has been in practice in Perham since April 1, 1947 when he joined his brother, **Dr. Ivan Bigler**, there in his medical practice.

* * *

Dr. Jack Friedman of Mount Sinai Hospital, Minneapolis, was the guest speaker at a meeting of the Stearns-Benton Medical Society, February 19.

* * *

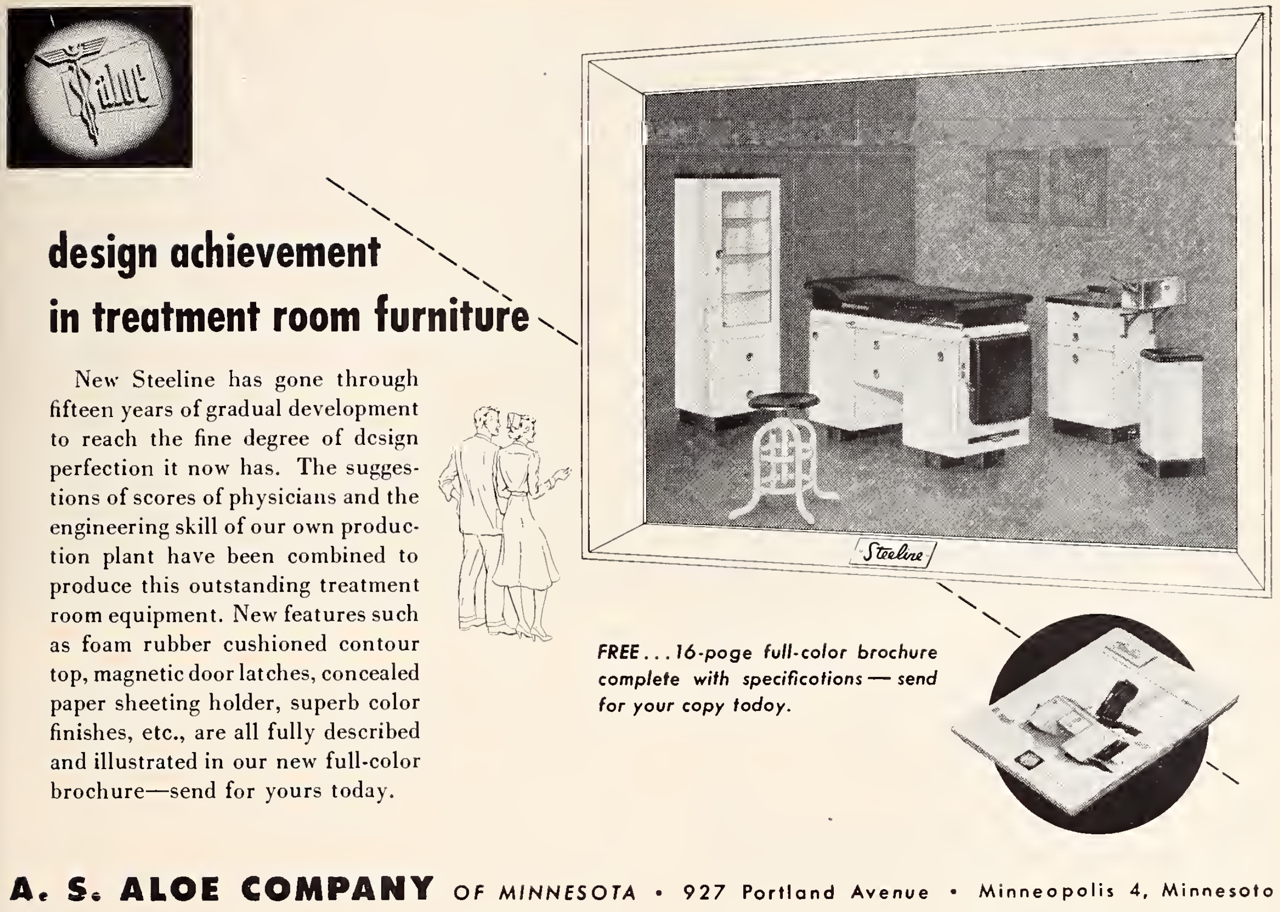
Dr. T. P. Mollers, of Soudan, was elected secretary of the Range Medical Society at a recent meeting of the staff. **Dr. Paul Reed** of Virginia, is president of the group which is composed of members from Duluth and Range communities.

* * *

Dr. John P. Dahlstet, Mankato, has been recalled to active duty with the Navy. He left for assignment at the Marine corps air station at Miami, Florida, February 24.

* * *

Dr. F. W. Behmler, of Morris, has been appointed Stevens County United States Defense Bond chair-



design achievement in treatment room furniture

New Steeline has gone through fifteen years of gradual development to reach the fine degree of design perfection it now has. The suggestions of scores of physicians and the engineering skill of our own production plant have been combined to produce this outstanding treatment room equipment. New features such as foam rubber cushioned contour top, magnetic door latches, concealed paper sheeting holder, superb color finishes, etc., are all fully described and illustrated in our new full-color brochure—send for yours today.

FREE . . . 16-page full-color brochure complete with specifications — send for your copy today.

A. S. ALOE COMPANY *OF MINNESOTA* • 927 Portland Avenue • Minneapolis 4, Minnesota

man. As chairman, Dr. Behmler will co-ordinate efforts to meet the 1953 Stevens County goal of $360,000.

* * *

Dr. C. H. Coombs, of Cass Lake, moved into his new six-room medical building recently.

* * *

Dr. Walter Wells, of Jackson, president of the Southwestern Minnesota Medical Society, was injured in a car-truck collision, February 22, while he was making a sick call. Dr. Wells suffered a fractured pelvis. His car was demolished.

* * *

Dr. Owen Wangensteen, University of Minnesota Medical School professor, and member of the national and state boards of the American Cancer Society, attended a meeting of the American Cancer Society in Chicago, February 21, accompanied by three of his patients. The patients—Mrs. Catherine McKee, of Bemidji, Elias Lindeberg, of Minneapolis, and Mrs. Carrie Lang, of Saint Paul, appeared at the meeting to demonstrate medical advances made in recent years in cancer research.

* * *

Dr. McLemore Bouchelle, East Range Clinic of Virginia, spoke on "The Attitude of the Patient and his Family toward Cancer," to the Gillett Club of Eveleth, February 16.

Dr. Inge Eleanore Mook, Minneapolis, was a guest speaker at a general meeting of the American Association of University Women, held at Duluth, February 24. Dr. Mook is the recipient of the AAUW, Duluth branch international study grant for 1951-1952. Her topic was "Circle the World with Friendship." Dr. Mook received her medical degree in 1950 from the University of Goettingen in Germany and completed her internship in that country. She is now specializing in heart disease and diseases of the circulation of the blood at the Heart Hospital of the University of Minnesota Hospitals, Minneapolis.

* * *

Dr. W. A. Miller, of New York Mills, was honored after fifty-seven years of service at a testimonial banquet and program, February 17, sponsored by the local Lions Club. Besides serving the community as a physician, in his earlier days Dr. Miller was obliged to serve also as dentist and druggist, as the need arose. Dr. E. C. Hanson, toastmaster for the occasion, read a telegram from the Minnesota State Medical Association, congratulating Dr. Miller on his life-time of service in the medical profession. Dr. and Mrs. Miller were both cited for their contributions to community life in general.

* * *

Dr. and Mrs. E. J. Tanquist, of Alexandria, left in late February on a trip to Mexico, Guatemala, and

Yucatan. On their way back Dr. Tanquist attended the American Academy of General Practice at St. Louis, Missouri.

* * *

Dr. Louis J. Wilson, in medical practice with his father, **Dr. R. H. Wilson,** of Winona, was recalled to active duty with the United States Navy in February. Dr. Wilson received his medical degree from the University of Minnesota in June, 1952. During World War II, he served as an ensign on an aircraft carrier in the Pacific.

* * *

Dr. W. F. Widen, of the Bloomington-Lake Clinic in Minneapolis, was a recent contributor to the *Minneapolis Star* in "What My Religion Means to Me." Dr. Widen has been Sunday School superintendent at Bethlehem Baptist Church for thirty years, is chairman of the Board of Child Evangelism Fellowship for Minneapolis, director of Minneapolis Youth for Christ, winner of several national tennis honors, and was a Navy doctor in the South Pacific in World War II.

* * *

Dr. R. O. Quello, of Minneapolis, spoke to the members of the Richfield Pre-School Mothers Club on "Physical Well-Being of the Child" at the February meeting.

* * *

Dr. Glenn Nelson, of Fairfax, was appointed local chairman for the annual Heart Fund this year.

* * *

Dr. Robert B. Pierce, of Renville, barely escaped injury February 19, when his car was struck by a fast Milwaukee freight train. The car was badly damaged but Dr. Pierce had time to leap free seconds before the crash.

* * *

Dr. H. A. Christiansen, of Jackson, attended the postgraduate course on cardiovascular disease at the University of Minnesota in February.

* * *

Dr. Allan M. Gunn-Smith, recently discharged from service with the U. S. Navy, opened an office in Two Harbors in late February. He shares office space with **Dr. Ralph Papermaster** but has his own practice.

* * *

Dr. Sidney O. Hughes, recently discharged from service with the U. S. Army, joined the staff of the Winona Clinic in March. Dr. Hughes was graduated from the University of Pennsylvania Medical School in 1947. He completed his internship and a medical residency at Presbyterian Hospital in Philadelphia before being called into the army. Dr. Hughes served in Korea on the staff of the 121st Evacuation Hospital in Seoul.

* * *

Dr. Benjamin Viel, director of Chile's leading medical school, has been lecturing on health problems in Chile, at the University of Minnesota, in the absence of Dr. Gaylord Anderson, director of the school of public health, who is in Egypt.

THE
MEDICAL PROTECTIVE
COMPANY
FORT WAYNE, INDIANA

PROFESSIONAL PROTECTION
EXCLUSIVELY
SINCE 1899

specialized service
assures *"know-how"*

MINNEAPOLIS Office:
Robert L. McFerran, Rep.,
2422 Clinton Ave. So., Apt. E-14,
Telephone Fillmore 1292

COMPLETE
Laboratory Service
IN

Deep X-Ray Therapy
Roentgen Diagnosis
Radium Treatment
Radium Rentals
Clinical Biochemistry
Clinical Pathology
Tissue Examination
Clinical Bacteriology
Interpretation of YOUR E.K.G. records
Toxicological Examinations

MURPHY LABORATORIES
—Est. 1919
Minneapolis: 612 Wesley Temple Bldg., At. 4786
St. Paul: 348 Hamm Bldg., Ce. 7125
If no answer call: 222 Exeter Pl., Ne. 1291

WHERE ALCOHOLICS ACHIEVE INSPIRATION FOR RECOVERY

Where gracious living, a homelike atmosphere and understanding companionship contribute to successful rehabilitation.

200 acres on the shores of beautiful Lake Chisago

The methods of treatment used at the Hazelden Foundation are based on a true understanding of the problem of alcoholism. Among the founders of the nonprofit Hazelden Foundation are men who have recovered from alcoholism through the proved program of Alcoholics Anonymous and who know the problems of the alcoholic. All inquiries will be kept confidential.

HAZELDEN FOUNDATION

Lake Chisago, Center City, Minn. Telephone 83

Dr. David Hoehn, of Holdingford, was elected president of the Central Minnesota Chapter of the American Academy of General Practice, and **Dr. Bernice Andrews**, of Holdingford, was elected secretary at a meeting held in St. Cloud, February 12.

* * *

Dr. J. E. Ponterio, of Shakopee, received word of the death of his father, Angelo Ponterio, in February. Mr. Ponterio was vacationing in Sacramento, California, at the time of his death.

* * *

Dr. Barney Gervais and **Dr. Dave Sanderson**, of Fergus Falls, were among the community members named to the board of directors of the Fergus Falls Jaycees at the meeting, March 3.

* * *

Dr. Arthur C. Kerkhof, clinical assistant professor, Department of Medicine, University of Minnesota, was the guest speaker at a clinical conference on heart disease, held at the Union Hospital in New Ulm, March 5.

* * *

Dr. Owen H. Wangensteen, professor of surgery at the University of Minnesota, accented the hopeful aspect of cancer control at a Cancer campaign meeting held at the Normandy Hotel, Minneapolis, February 26 and 27.

* * *

Commander Percy Demo, son of **Dr. and Mrs. W. A. Demo**, of Blue Earth, has been assigned as physician at the American Embassy in Moscow, Russia. Commander Demo left for his assignment in late March. He will be the only American physician in Moscow, and his tour of duty is expected to extend for eighteen months. Commander Demo received his medical degree from the Iowa State Medical School. Before World War II, he practiced medicine at Wells for twelve years.

* * *

Dr. J. K. Butler, of Cloquet, attended the American Medical Association National Council on Rural Health held in Roanoke, Va., in March.

* * *

Dr. Gordon Vaughn, Saint Paul, was recently appointed National Medical Examiner for the Degree of Honor Protective Association. Dr. Vaughn is a graduate of the University of Minnesota Medical School, has had several years of general practice, and served two years in the Army Medical Corps. Dr. Vaughn is now on the staff of the Health Service at the University of Minnesota Hospitals.

* * *

Dr. Kenath Sponsel, Minneapolis orthopedic surgeon, spoke at a meeting of the Minnesota Chapter, American Physical Therapy Association, on March 4, at the Minneapolis YWCA. He described orthopedic appliances and how they can be adapted or used for physical therapy.

* * *

Dr. Albert V. Stoesser, of the Department of Pediatrics, University of Minnesota, was one of the first group of candidates to be orally examined by the new Subspecialty Board of Pediatric Allergy. The examination was given at the Children's Hospital, Harvard Medical School, Boston, on February 25, preceding the annual meeting of the American Academy of Allergy.

* * *

Dr. George E. Sherwood, of Kimball, attended the International Session of the American Academy of General Practice, held in Mexico City, April 1.

* * *

Dr. J. J. Carroll became associated with the Hartfiel Medical Clinic in the Montevideo-Maynard community in February. Dr. Carroll is a graduate of Creighton University at Omaha, Nebraska, and interned at St. Joseph's Hospital there. He spent three years in practice at Laurel, Nebraska, and was just recently discharged from the U. S. Air Force.

* * *

A contribution of $750 as a memorial to the late **Dr. Theodore Sherping** was made by the Fergus Falls Rotary Club in February. The funds were turned over to the hospital since the scholarship fund which was previously created by the Club as a Sherping memorial was seldom used.

* * *

Dr. Lyle Weed, of the Department of Bacteriology at the Mayo Clinic, spoke at the Veterans Hospital at Iowa City, Iowa, in February. Dr. Weed spoke on "Bacteriology in Modern Medicine," to doctors of the community, medical students and staff members at the University of Iowa, as well as Veterans Hospital personnel. Dr. Weed was formerly on the staff of the University of Iowa Hospital.

* * *

Dr. Louise Wurdemann, of White Bear Lake, was married to Dan Madison King, of Saint Paul, February 14. Dr. Wurdemann has been practicing in White Bear Lake since 1948. She received her medical degree from the University of Iowa and interned in East Orange General Hospital in East Orange, New Jersey. Mr. King, librarian of the Minnesota Historical Society since 1949, was formerly from New York City, and was connected with the New York Public Library and the Cooper Union for the Advancement of Science and Art.

Dr. C. R. Wall, of Minneapolis, was the guest speaker at a ladies' night banquet given by the Men's Brotherhood of the First Baptist Church at The Palms in St. Cloud. Dr. Wall, who recently returned from an extended tour of Greece, Egypt, Assam and Ethiopia, spoke on the challenge of foreign missions.

* * *

Dr. J. G. Brennan, fellow in dermatology at the Mayo Clinic, was the recipient of the first award in the third annual essay contest sponsored by the American Dermatological Association. His paper was entitled "Contributions to the Study of Pemphigus." Dr. Brennan will present his paper at the next scientific session of the Association which will be held at Lake Placid, New York, June 9 to 13.

Dr. O. K. Gilje, special student in dermatology, won honorable mention in the contest for his paper entitled "Capillary Microscopic Examination of Skin Diseases."

Dr. T. B. Fitzpatrick, former fellow in dermatology, won the award two years ago in the first annual essay contest of the Association.

HOSPITAL NEWS

St. Joseph's Hospital, Saint Paul—Minnesota's oldest hospital—will celebrate its centennial May 16 and 17.

World-famous medical persons who will be present include—Sir Alexander Fleming, British Penicillin discoverer; Dr. Philip S. Hench of the Mayo Clinic, cortisone pioneer; Dr. Richard R. Trail, British tuberculosis specialist; Dr. Louis H. Bauer, Hempstead, New York, president of the American Medical Association; Dr. Harold L. Foss of Danville, Pennsylvania, president of the American College of Surgeons, and Dr. William Boyd, pathologist of the University of British Columbia, at Vancouver.

The two-day celebration will be devoted to sessions in the Hotel Lowry and the Auditorium theater section. A centennial dinner will be held in the Hotel Lowry with reunions of interns, staff physicians, and alumnae of the nursing school. A pontifical high mass will be celebrated Sunday, May 17, in the Cathedral by Archbishop Murray.

Since St. Joseph's Hospital was founded in 1853, by the Sisters of St. Joseph, it has added a number

HOMEWOOD HOSPITAL is one of the Northwest's outstanding hospitals for the treatment of Nervous Disorders—equipped with all the essentials for rendering high-grade service to patient and physician.

Operated in Connection with
Glenwood Hills Hospitals

HOMEWOOD HOSPITAL
Corner Penn and Plymouth Avenues North
Minneapolis Minnesota

of historic "firsts" in its field. The first successful removal of a gall bladder in America was done there in 1886 by Dr. Justus Ohage; in 1903, probably the nation's first real use of a bronchoscope was made by Dr. Arnold Schwyzer. Recently the hospital has taken the lead by being the first private hospital to do chest x-rays on all patients routinely on admission.

* * *

A new research laboratory at *Ancker Hospital,* Saint Paul, is nearing completion. It is a small red brick building which houses a chemistry laboratory, an operating room for experimental surgery, a post-surgical recovery room, animal rooms and research workrooms. It is air-conditioned to prevent summer deaths of research animals. Most of the ceilings are unplastered because plastering is expensive, but the walls are tiled. The building is windowless with a modern hood in the chemistry laboratory to draw away dangerous fumes. All planning has benefited from the services of the same architect who designed the Mayo Clinic and Mayo Foundation's new four million dollar medical sciences building.

Construction was planned so additions are possible, as Dr. Ivan Baronofsky plans some day to see a radioisotope laboratory for work with atomic medicines added to the present building.

Dr. Baronofsky, University of Minnesota staff member, director of postgraduate surgical education at Ancker Hospital, is largely responsible for the existence of the new laboratory. When he was told that welfare funds would not be made available for such a laboratory, he managed to recruit some $74,000 in private donations to the Minnesota Medical Foundation. Over the next two years the welfare board added $60,000, thus making the building of the lab possible.

The United States Public Health Service, the Minnesota Heart Association, and the University of Minnesota graduate school have made research grants.

* * *

On January 18, 1953, the new **Hudson Memorial Hospital** was formally opened. The event culminates seven years of planning and demonstrates what persistence on the part of a small community can accomplish.

The community of 3,500 persons at Hudson, Wisconsin, has been in need of a first class hospital for years. The donation, in 1946 of $70,000 by Mr. and Mrs. Stephen C. Phipps of Hudson, in memory of Mr. Phipps' father started the project. Mr. and Mrs. Charles A. Ward, also residents of Hudson, added $50,000 which with $30,000 contributed by the Trustees of the Dr. Boyd Williams Estate Trust and $40,000 by the town of Hudson was supplanted by individual donations from some 900 families to attain the goal of $469,000. The hospital auxiliary, with 500 members, sponsored teas and card parties and prepared the linen and gowns. Volunteers helped clear the ground and police the hospital for the grand opening. As a result of community cooperation, the hospital is debt-free and has a fund of $20,000 to start operation. No government funds were requested or received.

THEOCALCIN

Theocalcin

For the Failing Heart of Middle Life

Prescribe 2 or 3 tablets of Theocalcin, t. i. d. After relief is obtained, continue with smaller doses to keep the patient comfortable. Theocalcin strengthens heart action, diminishes dyspnea and reduces edema.

Brand of theobromine-calcium salicylate,
Trade Mark reg. U. S. Pat. Off.

Bilhuber-Knoll Corp. Orange, N. J.

The Hudson Memorial Hospital has eight private and twelve semi-private rooms, all with picture windows overlooking the St. Croix valley. The hospital is complete with a central oxygen supply piped to each room, a delivery room equipped with an oxygen-air pressure lock, a device for inducing natural breathing in newborn infants, modern laboratories and an out-patient department.

The inhabitants of Hudson are to be congratulated on their community spirit.

* * *

Dr. R. H. Moe was elected the new chief of staff of St. Mary's Hospital, Duluth, and Dr. F. T. Becker, the new acting chief. Dr. G. C. McRae was chosen chief-of-staff-elect, and Dr. J. D. Barker, secretary.

Departmental chiefs named for two-year terms were Dr. J. S. Spang, surgery; Dr. R. O. Bergan, pediatrics and contagion; Dr. J. E. Haavik, neuropsychiatry; Dr. J. F. Schmid, dermatology, and Dr. J. F. Feuling, physical medicine.

* * *

Dr. Nordahl P. Peterson was named the chief of *Swedish Hospital* medical staff for 1953, with Dr. Leonard S. Arling, vice president, and Dr. Elmer T. Cedar, secretary-treasurer, at the regular meeting in March. The executive committee includes Dr. Russell C. Lindgren, Dr. Robert E. Johnson, Dr. Arthur N. Russeth and Dr. V. J. P. Lundquist.

* * *

Dr. Henry C. Goss was elected chief of staff at the *Glencoe Municipal Hospital* at the annual meeting held in March. Dr. C. W. Truesdale was named secretary-treasurer.

BLUE CROSS-BLUE SHIELD NEWS

During the approximate five years that Blue Shield has been operating, it has shown a continued growth in enrollment. In the earlier development of Blue Cross and Blue Shield, the need was experienced for swift mass enrollment, and in addition this was felt to be the soundest method of securing subscribers. After several years, complaints were voiced by self-employed persons and those who were unable to secure coverage through a group. This was particularly true in the rural areas of Minnesota, and it became apparent that employed people of urban areas enjoyed a distinct advantage. Thus, with some misgivings, the first non-group campaign was initiated with only one effective date per year. The actuarial soundness of non-group enrollment, based on critical screening of the applications to eliminate undesirable risks, became immediately apparent so that the program was expanded to three or four enrollment dates a year. In keeping with this program of covering more people and increased benefits, the Board of Directors has approved a policy for continuous non-group enrollment offering to every eligible person the opportunity to participate in the plan without the necessity of waiting for infrequent or periodic enrollment dates. This represents another significant milestone in the long-range program of providing the maximum in medical and surgical benefits to the greatest number of people at a cost which they can afford.

The benefit increases which went into effect on October 1, 1952, are now beginning to be reflected in the monthly Blue Shield claims payments for services rendered by doctors of medicine. On the basis of the present enrollment in Blue Shield with its increased benefits, analysis shows that payments to doctors for services rendered will exceed four and one-half million dollars in 1953. With the growing demand of the public to be adequately protected in the field of medical and surgical care, the foregoing facts clearly indicate that Blue Shield by increasing its benefits and coverage is providing the solution for financial burdens involved in maintaining and increasing health standards. Such expansion is part of a long-range program to make the "Doctors Plan" the foremost method in the nation for the relief of the public from the financial hazards involved in the preservation of health.

Such a program requires the constant co-operation of the members of the medical profession as well as their knowing what Blue Shield provides, what it does not cover, and whenever possible their securing new subscribers for the plan. To aid in the administration of this year-around continuous non-group enrollment policy, new non-group applications are now being prepared, and with them, the mechanics of enrollment are simple. The applicant must be under sixty-five years of age,

PHYSICIANS AND HOSPITALS SUPPLY CO., Inc.
1400 HARMON PLACE, MINNEAPOLIS, MINN.
INSTRUMENTS · TRUSSES · EQUIPMENT · PHARMACEUTICALS · DRUGS
MAIN 2494

Insurance at a Saving
Druggists' Mutual Insurance Company
OF IOWA, ALGONA, IOWA
Fire - Tornado - Automobile Insurance
Prompt Loss Service
MINNESOTA REPRESENTATIVE—S. E. STRUBLE, WYOMING, MINN.

It had to be good
to get where it is
DRINK
Coca-Cola
REG. U. S. PAT. OFF.

THE COCA-COLA COMPANY

give a small amount of medical history and mail the application to the Blue Shield office. Review of the medical history is being revised so that as few riders or exclusions as possible will be issued in conjunction with these contracts.

In establishing this program, complete analysis has been made of similar enrollment programs carried on by other Blue Shield plans in the nation. Every method has been made to utilize the best features of those plans which have been successful in promoting such a program, and to eliminate insofar as possible any restrictions upon enrollment. For actuarial soundness, some limitations or enumeration of those things which Blue Shield does not cover, are essential. Only in this manner, will the plan be financially secure for its participating subscribers regardless of epidemics or catastrophic emergencies. A successful non-group enrollment campaign carried on by Blue Shield with the co-operation of its participating physicians will assist materially in the further growth of the plan, and will provide the proper security for unlimited future development and expansion toward the goal of complete solution of the socio-economic problem involved in providing the best in high-grade medical and surgical care.

MEDINA CRITICIZES SEARCH FOR SECURITY

Federal Judge Harold R. Medina, of New York, said that "everyone seems to be looking for security." Boys just out of college ask personnel directors what the pension rights are and at what age they will be allowed to retire, he said at the summer commencement exercises of the University of Chattanooga. "Croakers abound everywhere telling us that everything is going to pot, that the world is plumb full of corruption, and that nothing can be done about it.

"But the truth is that this do-nothing policy of playing everything safe is just about the worst thing that a person can do."

Turning to the Scriptural parable of the talents, in which those who traded and thus increased the number of their talents were commended while one who hid his talent in the earth was reproved, Judge Medina said that he believed this was a lesson "telling us, don't be afraid, don't be cynical, don't be lazy, keep plugging away all the time with zest and enthusiasm." The talent was both an ancient weight and unit of money.—*New York Times*, Sept. 3, 1952.

RADIUM & RADIUM D+E
(Including Radium Applicators)
FOR ALL MEDICAL PURPOSES
Est. 1919
Quincy X-Ray and Radium Laboratories
(Owned and Directed by a Physician-Radiologist)
Harold Swanberg, B.S., M.D., Director
W.C.U. Bldg. **Quincy, Illinois**

BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical Libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

BOOKS RECEIVED FOR REVIEW

RYPINS' MEDICAL LICENSURE EXAMINATIONS. Topical Summaries and Questions. Seventh Edition. Walter L. Bierring, M.D., F.A.C.P., M.R.C.P. Edin. (Hon.). Former Member, National Board of Medical Examiners, American Board of Internal Medicine, Iowa State Board of Medical Examiners; Professor Emeritus Theory and Practice of Medicine, College of Medicine, State University of Iowa; Secretary Federation of State Medical Boards of the United States; Chairman, American Board of Preventive Medicine and Public Health; Iowa State Commissioner of Health. With collaboration of a Review Panel. 856 pages. Price $8.00, cloth. Philadelphia: J. B. Lippincott Co., 1952.

CLINICAL APPLICATIONS OF SUGGESTION AND HYPNOSIS. Second Edition. William T. Heron, M.A., Ph.D., Professor of Psychology, University of Minnesota, Minneapolis, Minnesota. 137 pages. Price $3.75, cloth. Springfield, Illinois: Charles C Thomas, 1953.

DOCTOR IN THE HOUSE. Richard Gordon, 186 pages. Price $2.75, cloth. New York: Harcourt, Brace & Co., New York, 1953.

CHILD DEVELOPMENT. The Process of Growing Up in Society. William E. Martin and Celia Burns Stendler, of the University of Illinois. Under the editorship of Willard B. Spalding, Oregon State System of Higher Education. 519 pages. Illus. Price $6.50, cloth. New York: Harcourt, Brace & Co., New York, 1953.

CLINICAL ALLERGY. French K. Hansel, Director, Hansel Foundation for Education and Research in Allergy; Chief of Allergy Service, DePaul Hospital, St. Louis. 1005 pages. Illus. Price $17.50. St. Louis, C. V. Mosby Co., 1953.

This book was written to replace Dr. Hansel's limited text on *Allergy of the Nose and Paranasal Sinuses* (1936). Because of the great advances in the knowledge of allergy, the earlier text is no longer adequate today.

The author has written this for anyone interested in the subject. It is for the specialist, for the general practioner, and for the beginner in allergy.

In the first chapter, terminology is discussed so that there will be no confusion as to meaning of terms; and included is a revised list of definitions, prepared by the Committee on Nomenclature of the Association of Allergy Clinics of Greater New York, and a historical review of the field of allergy.

Dr. Hansel presents his subject by giving first the basic concepts of anaphylaxis and allergy. Then he describes the different types of allergies, such as serum allergy, allergic reactions to insects, hay fever due to pollens. Diagnosing allergies requires careful history taking and testing. For the latter, the author lists supplies needed, explains how to prepare dilutions, and outlines the technique of giving tests, and discusses the interpretation of reactions.

A large section of the book is devoted to discussion of the manifestations and treatment of allergy from the standpoint of organs and system involved; and five chapters are given over to allergy in children. The bibliography at the end of each chapter contains numerous and up-to-date references.

M.M.P.

OFFICE MANAGEMENT OF OCULAR DISEASES. By William F. Hughes, Jr., M.D., Professor and Head, Department of Ophthalmology, University of Illinois College of Medicine; Ophthalmologist in Chief, Illinois Eye and Ear Infirmary, and Attending Ophthalmologist, Presbyterian Hospital, Chicago. 452 pages. Illus. Price $9.00. Chicago: Year Book Publishers, ©1953.

"Office management of ocular diseases" is a well-planned, well-written summary of the diagnosis and treatment of diseases commonly encountered in ophthalmological practice. The author is particularly well qualified because of his special interest and past contributions to the literature in the field of beta radiation therapy, corneal burns and plastic surgery of the lids; and in these fields the book is particularly excellent. The chapter on Radiation treatment of the eye contains basic information presented in a form which is readable and understandable. It could be read with profit by every ophthalmologist even though this therapy is usually carried out in collaboration with a radiologist.

DANIELSON MEDICAL ARTS PHARMACY, INC.

PHONES:
ATLANTIC 3317
ATLANTIC 3318

10-14 Arcade, Medical Arts Building
825 Nicollet Avenue—Two Entrances—78 South Ninth Street
MINNEAPOLIS

HOURS:
WEEK DAYS—8 to 7
SUN. AND HOL.—10 TO 1

Ulmer
PHARMACAL COMPANY
1400 Harmon Place
Minneapolis 3, Minnesota

send for our new brochure M-453b on
ULVICAL "ULMER"
the last word in pre-natal therapy

ACCIDENT • HOSPITAL • SICKNESS

INSURANCE

For Physicians, Surgeons, Dentists Exclusively

ALL PREMIUMS COME FROM PHYSICIANS SURGEONS DENTISTS ALL CLAIMS GO TO

$5,000 accidental death Quarterly $8.00 **$25 weekly indemnity, accident and sickness**	**$15,000 accidental death Quarterly $24.00** **$75 weekly indemnity, accident and sickness**
$10,000 accidental death Quarterly $16.00 **$50 weekly indemnity, accident and sickness**	**$20,000 accidental death Quarterly $32.00** **$100 weekly indemnity, accident and sickness**

COST HAS NEVER EXCEEDED AMOUNTS SHOWN

ALSO HOSPITAL INSURANCE

	Single	Double	Triple	Quadruple
60 days in Hospital	5.00 per day	10.00 per day	15.00 per day	20.00 per day
30 days of Nurse at Home	5.00 per day	10.00 per day	15.00 per day	20.00 per day
Laboratory Fees in Hospital	5.00	10.00	15.00	20.00
Operating Room in Hospital	10.00	20.00	30.00	40.00
Anesthetic in Hospital	10.00	20.00	30.00	40.00
X-Ray in Hospital	10.00	20.00	30.00	40.00
Medicines in Hospital	10.00	20.00	30.00	40.00
Ambulance to or from Hospital	10.00	20.00	30.00	40.00
COSTS (Quarterly)				
Adult	2.50	5.00	7.50	10.00
Child to age 19	1.50	3.00	4.50	6.00
Child over age 19	2.50	5.00	7.50	10.00

$4,000,000.00 INVESTED ASSETS

PHYSICIANS CASUALTY ASSOCIATION
PHYSICIANS HEALTH ASSOCIATION

$19,500,000.00 PAID FOR CLAIMS

51 years under the same management
400 First National Bank Building
Omaha 2, Nebraska

$200,000.00 deposited with State of Nebraska for protection of our members

The book contains up-to-date information on all new drugs and procedures. For example, the indications for the use of cortisone are extensively outlined; and the techniques of measurement of rate of aqueous outflow (tonography) and of application of beta rays to the cornea are detailed.

A general practitioner could have no better reference book in emergency office treatment of eye diseases and minor eye and lid surgery he may be called upon to perform. The short but adequate summaries of neuro-ophthalmology, and diseases of the conjunctiva, cornea and orbit would be invaluable to him. The taking of visual fields, modern treatment of cataracts and glaucoma and problems of ocular motility are treated with enough basic information to give the general practitioner an understanding of the ophthalmologist's treatment. Indeed, the only criticism of the book, and it is a forgivable one, is that quite extensive passages would be elementary for the average opthalmologist and seem better designed for a non-specialist or student.

J. A. McNeill, M.D.

SECOND ANNUAL REPORT ON STRESS. Hans Selye, M.D., Ph.D. (Prague), D.Sc. (McGill), F.R.S. (Canada), Professor and Director of the Institut de Médecine et de Chirurgie expérimentales, Université de Montréal, and Alexander Horava, M.D. (Lausanne), Research Associate and Librarian of the Institut de Médecine et de Chirurgie expérimentales, Université de Montreal. 526 pages. Illus. Cost $10.00. Montreal: Acta, Inc., ©1952.

This volume is the second of a series of annual supplements to the book, *Stress—The Physiology and Pathology of Exposure to Stress,* by Hans Selye. According to the introduction (p. 1), these annual reports are "written as a combination of an extensive classified index of pertinent new facts (literature and unpublished observations made at our Institute during the year) with a concise evaluation of the principal findings." That such a compilation is a task is evidenced by the fact that in this volume alone references are made to over 4,000 publications.

Before attempting to use this volume, one is urged to study the introduction which explains how to use the annual report to best advantage. The report contains a "brief synopsis of the stress concept as it presents itself in 1952," the fourteen principal criticisms of the concept, and the problems to be solved. It also contains a classified index to the references covering both general and special physiology and pathology of stress with introductory notes. There is a series of photographs showing recent observations on the effects of stress and the adaptive hormones. The bibliography itself is arranged alphabetically by author; and for quick reference there is an alphabetical subject index at the end.

M.M.P.

MEDICAL MANAGEMENT OF GASTROINTESTINAL DISORDERS. Garnett Cheney, M.D., Clinical Professor of Medicine, Stanford University Medical School. 478 pages. Illus. Price, $6.75. Chicago: The Year Book Publishers, 1950.

This very readable book is divided into two parts. The first part is called "The Patient Approach" and deals with the all-important history and physical examination. Clinical laboratory examinations are dealt with in turn, followed by the indications for special endoscopic and x-ray examinations.

The second half of the book deals with gastrointestinal disorders from the point of view of symptomatology instead of the more orthodox method of presenting diagnoses. This method makes the book a handy reference source for the practitioner or student.

The author presents a concise, common sense approach to the medical management of Gastroenterology. Psychogenic and somatic aspects are presented in sound perspective.

The book is of interest to the internist and should be of particular value to the student and general practitioner.

Dwight L. Martin, M.D.

TEXTBOOK OF SURGERY. Edited by H. F. Moseley, M.A., D.M., M.Ch. (Oxon), F.A.C.S., F.R.C.S. (Eng.), F.R.C.S. (C.), Assistant Professor of Surgery, McGill University; Associate Surgeon, Royal Victoria Hospital, Montreal, Canada. Foreword by G. Gavin Miller, M.D., C.M., M.Sc., F.R.C.S. (C.), F.A.C.S., Chairman of the Surgical Department, McGill University; Surgeon-in-Chief, Royal Victoria Hospital, Montreal, Canada. 896 pages. Illus. Price, $15. St. Louis: C. V. Mosby Co., 1952.

This unusually good textbook of surgery is edited by an assistant professor of surgery at McGill University. The organization and presentation of material makes it a fine text for the student and intern as well as a good reference work for the physician. Of particular note is the use made of illustrations throughout the text. Forty-six color plates, most of which were produced by Frank Netter, serve as potent visual aids to the well-organized text. In addition to these plates, there are 460 figures consisting of clear reproductions of roentgenograms, lucid diagrams and good photographs to illustrate the text. It is the intelligent use of these plates and figures which make this book stand out among the rank and file of surgical texts. For example, many pages could not describe what Netter has conveyed in four color plates dealing with the diseases of the prostate gland.

The text has been carefully considered and finely written. Its brevity is commendable. Discussion of diseases and pathologic conditions is succinct but adequate while the presentation of methods of treatment is complete and thoroughly up to date.

The chapter on the heart and pericardium contains much about congenital cardiac lesions, cardiac arrest, and acquired cardiac lesions not found in other texts of surgery. The treatment of these lesions is presented in a manner which makes it simple for the student to understand the principles of the operations.

In general, the chapter on thoracic surgery is good. However, the changes in the field of surgery of pulmonary tuberculosis have been so rapid that this section is already somewhat outdated. Mention is made of resectional surgery for pulmonary tuberculosis, but too little space is given this method of therapy, while too much space is allotted to thoracoplasty.

On the whole the book can be recommended as one of the best textbooks of surgery to date. Certainly it is a text which will allow the medical students to more simply and quickly cover the broad field of surgery. It is pleasant to find a book which offers sensible short cuts to understanding at the present time, when we are so prone to overwhelm the reader with verbosity.

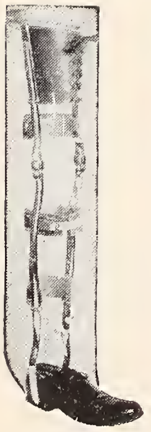
Frederich M. Owens, Jr., M.D.

PHYSICIANS' COLLECTIONS SHOW SLIGHT DECLINE

The average United States physician collected 85 per cent of the bills owed him by patients last year—a decline of three percentage points in his rate of collections since 1948.

So states the March issue of *Medical Economics,* national business magazine for doctors, which is publishing the results of a nationwide survey of medical practice, based on a questionnaire sent to each of its 134,000 physician-readers.

The magazine also found that the average doctor nowadays takes in $2,601 a year from Blue Shield and other health plans. This amounts to about 11 per cent of his gross income.



SKILL AND CARE!

Combine with quality materials in all Buchstein-Medcalf orthopedic appliances. Our workmanship and scientific design conform to the most exacting professional specifications. Accepted and appreciated by physicians and their patients for more than 45 years.

ARTIFICIAL LIMBS, TRUSSES,
ORTHOPEDIC APPLIANCES,
SUPPORTERS, ELASTIC HOSIERY

Prompt, painstaking service

Buchstein-Medcalf Co.
223 So. 6th St. Minneapolis 2, Minn.

RADIUM RENTAL SERVICE
4340 W. 24TH STREET
MINNEAPOLIS 5, MINNESOTA
TEL. ATLANTIC 5297

Radium element prepared in type of applicator requested

ORDER BY TELEPHONE OR MAIL
PRICES ON REQUEST

Hall, Anderson & Nordehn

PRESCRIPTION PHARMACY
BIOLOGICALS
PHYSICIANS' SUPPLIES

SAINT PAUL, MINN.

LOWRY MEDICAL ARTS BUILDING
TELEPHONE: CEDAR 2735

STOP . . .

BEFORE YOU BUY
YOUR NEW CAR—
SEE US . . .

we can save you money on the finance charge.

AMERICAN
NATIONAL
BANK
OF SAINT PAUL

Bremer Arcade Robert at 7th CE 6666

Member Federal Deposit Insurance Corporation

Index to Advertisers

Abbott Laboratories ... 302, 303, 314
Allied Medical Audit Control ... 308
Aloe, A. S., Co. ... 419
American Medical Association ... 403
American National Bank ... 429
Ames Co., Inc. ... 300
Anderson, C. F., Co., Inc. ... 411
Ayerst, McKenna & Harrison, Ltd. ... 320

Baker Laboratories, Inc. ... 312
Benson Optical Co. ... 409
Belleson's Medical Employment Service ... 430
Bilhuber-Knoll Corporation ... 423
Birches Sanitarium ... 410
Boyd & Boyd, Inc. ... 304
Brown & Day, Inc. ... 305
Buchstein-Medcalf Co. ... 428

Camel Cigarettes ... 319
Canfield, C. R., & Co. ... 298, 299
Caswell-Ross Agency ... 290
Chicago Pharmacal Co. ... 309
Ciba ... 306
Classified Advertising ... 430
Coca-Cola Co. ... 425
Cook County Graduate School of Medicine ... 414
Cordelia of Hollywood ... 301
Crestview Hospital ... 411

Dahl, Joseph E., Co. ... 418
Danielson Medical Arts Pharmacy, Inc. ... 426
Druggists Mutual Insurance Co. ... 424

Ewald Bros. ... Inside Back Cover

Fuller Pharmaceutical Co. ... 296

General Pharmacal Corporation ... 311
Glenwood Hills Hospital ... 431

Hall, Anderson & Nordehn ... 429
Hazelden Foundation ... 421
Homewood Hospital ... 422
Hotel Lowry ... 406
Hotel Saint Paul ... 406

Interstate Pharmacal Co. ... 410

Juran & Moody ... 417

Lederle Laboratories ... Facing Page 312
Lilly, Eli, & Co. ... Front Cover, 322

Mead Johnson & Co. ... 432
Medical Protective Co. ... 420
Medtronic ... 405
Merck & Co. ... 297
Milwaukee Sanitarium ... Back Cover
Minnesota Heart Association ... 408
Mounds Park Hospital ... Back Cover
Murphy Laboratories ... 420

North Shore Health Resort ... 413

Orgo Products Co. ... 414

Parke, Davis & Co. ... Inside Front Cover, 289
Patterson Surgical Supply Co. ... 409
Pengelly X-Ray Co. ... 404
Pfizer ... 307
Physicians Casualty Association ... 427
Physicians & Hospitals Supply Co. ... 294, 313, 424
Professional Credit Protective Bureau ... 295
Purepac Corporation ... 418

Quincy X-Ray & Radium Laboratories ... 425
Q-Test Distributors of Minneapolis ... 311

Radium Rental Service ... 428

St. Croixdale Sanitarium ... 292
Schering Corporation ... 315
Searle, G. D., & Co. ... 401
Squibb, E. R., & Sons, Div. of Mathieson Chemical Corp. ... 310

Tattle-Toes ... 321

Ulmer Pharmacal Co. ... 426
Upjohn Co. ... 293
U. S. Vitamin Corporation ... 318
University of Minnesota School of Nursing ... 407

Valleyview Hospital and Sanitarium ... 415

Walker, Archie, Jr. ... 317
Williams, Arthur F. ... 415
Winthrop-Stearns, Inc. ... 316

Classified Advertising

Replies to advertisements with key numbers should be mailed in care of MINNESOTA MEDICINE, *2642 University Avenue, Saint Paul 14, Minn.*

FOR RENT—Attractive doctor's suite in south Minneapolis. Wonderful location for a practice to be built up, or as an outlying office for a downtown doctor. Write Wm. L. Cochrane, 7301 Fremont Avenue South, Minneapolis 19, Minnesota. Telephone RO 9-8758.

WANTED—Unmarried physician, under 28. On a one-year trial, general practice, then possible partnership. Address E-350, care MINNESOTA MEDICINE.

LOCUM TENENS WANTED—July to October, any location. Good salary expected. Minnesota graduate, licensed. Married, family. Starting surgery fellowship, Mayo Clinic, in October. Address E-351, care MINNESOTA MEDICINE.

WANTED—General practitioner to join five-man clinic caring for a mining company's employes and families. Includes general practice, obstetrics, surgery and industrial work. Good salary, all equipment and car furnished. Living conditions and schools excellent. Location—Black Hills. Immediate opening. Address E-355, care MINNESOTA MEDICINE.

FOR SALE—EENT unopposed practice in wonderful town of 20,000 including suburbs. Large net income. Purchase out of receipts by small monthly payments. Address E. G. Barnet, M.D., Wisconsin Rapids, Wisconsin.

GENERAL PRACTITIONER WANTED—For association with older general surgeon and practitioner in Saint Paul. Minnesota license required. Favorable contract on percentage basis. Excellent opportunity for man with country practice wishing to locate in the city. Address E-356, MINNESOTA MEDICINE.

WANTED—Young associate in busy general practice. Completely modern clinic building, new equipment. New 20-bed hospital, one block from clinic. Salary open. Address E-357, care MINNESOTA MEDICINE.

Belleson's

MEDICAL EMPLOYMENT SERVICE

In the specialized field of all medical, dental and hospital personnel. Operated by a registered technician with medical personnel experience.

All interviews strictly confidential.

For Prompt, Efficient Service
Call or Write

1250 Baker Building
Minneapolis 2, Minnesota
Telephone: FIllmore 4063

PLACEMENT SERVICE

The Minnesota State Medical Association maintains a Medical Placement Service for the benefit of physicians who are looking for locations and positions; also for communities, medical groups and physicians who are looking for licensed medical assistance. For information, write to the Minnesota State Medical Association, 496 Lowry Medical Arts Bldg., Saint Paul 2, Minnesota.

FOR SALE—Radiographic-Fluoroscopic X-ray unit, including accessory and darkroom items complete. Consists of Mattern 60 MA, @90 K.V. generator with hand rocked tilting table, Bucky diaphragm and fluoroscopic screen assembly. For complete listing, write C. R. Holland, M.D., 422 Second Avenue Southwest, Rochester, Minnesota.

RADIOLOGIST—Diplomate American Board, thirty years, Priority IV, thoroughly trained and experienced in large hospital, desires association with hospital, individual or groups. Address E-353, care MINNESOTA MEDICINE.

FOR SALE—Building in Cambridge, Wisconsin, built to be physician's offices and home. Beautiful small locality anxiously seeking competent doctor. Small clinic type building about three years old, very modern. Price less than construction cost to qualified man. Easy terms. Write A. M. Wheeler, 536 W. Wisconsin Avenue, Milwaukee 3, Wisconsin.

WANTED—Three General Practitioners for three unopposed excellent locations in rich farming communities. Each should gross $20,000.00 in first year. Will assist in obtaining all office equipment; absolutely no strings attached. Hospital facilities excellent. Will hold locations open until July 1, if desired. Write Herbert A. Hartfield, M.D., 117½ South Main Street, Montevideo, Minnesota.

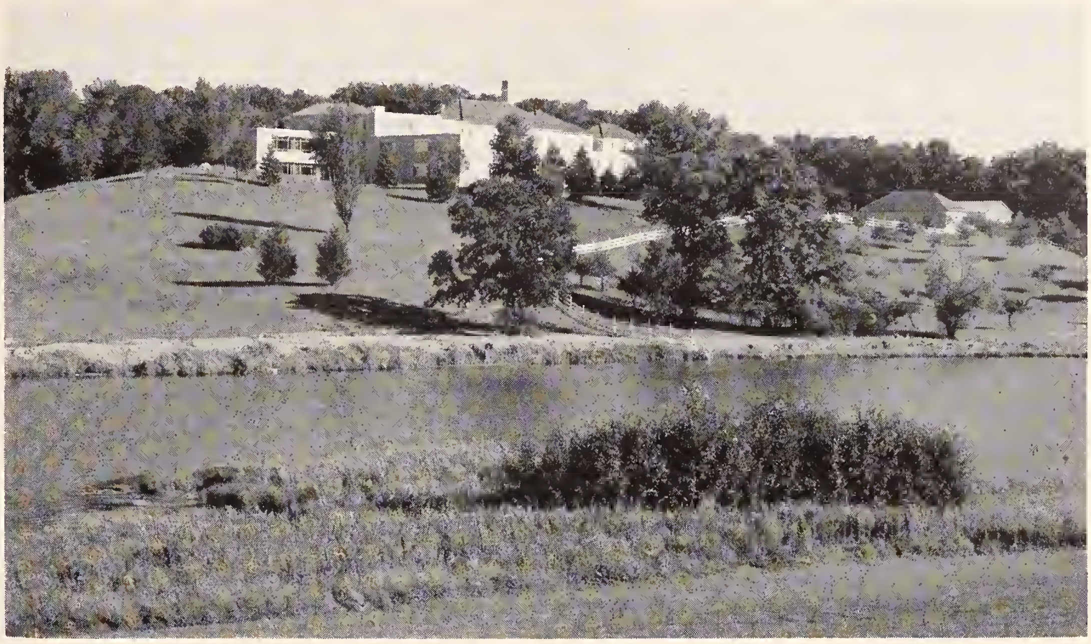
EXCELLENT OPPORTUNITY—For eye, ear, nose and throat man in Southern Minnesota Clinic. Address E-360, care MINNESOTA MEDICINE.

WANTED—Young physician as assistant or to buy a very large general practice—25 miles from Saint Paul. Complete equipment. Address E-358, care MINNESOTA MEDICINE.

EXCEPTIONAL OPPORTUNITY for OPHTHALMOLOGIST, preferably EENT, a city of 10,000, Central Minnesota, with large trade territory. Ample office space, fully equipped, in connection with established Clinic, recently made vacant by death of long-established EENT man. No other occulist nor EENT man in town. Address E-359, care MINNESOTA MEDICINE.

DOCTOR . . . *This is Your Hospital and Your School of Neuropsychiatric Nursing*

(By that we mean that not only have these institutions undertaken to constitute a haven of help for patients, but they form, in your interest a *remarkable facility for you professionally.)*



View of hospital, school, buildings and environs, 7 minutes from downtown Minneapolis

A COMPLETE NEURO-PSYCHIATRIC HOSPITAL

Up-to-date in all respects, new, functional buildings, set in spacious grounds, rehabilitation center, electroencephalography, therapies, laboratory. One of the largest neuro-psychiatric staffs in the United States. A voluntary, non-profit, non-sectarian institution of which this region may be proud.

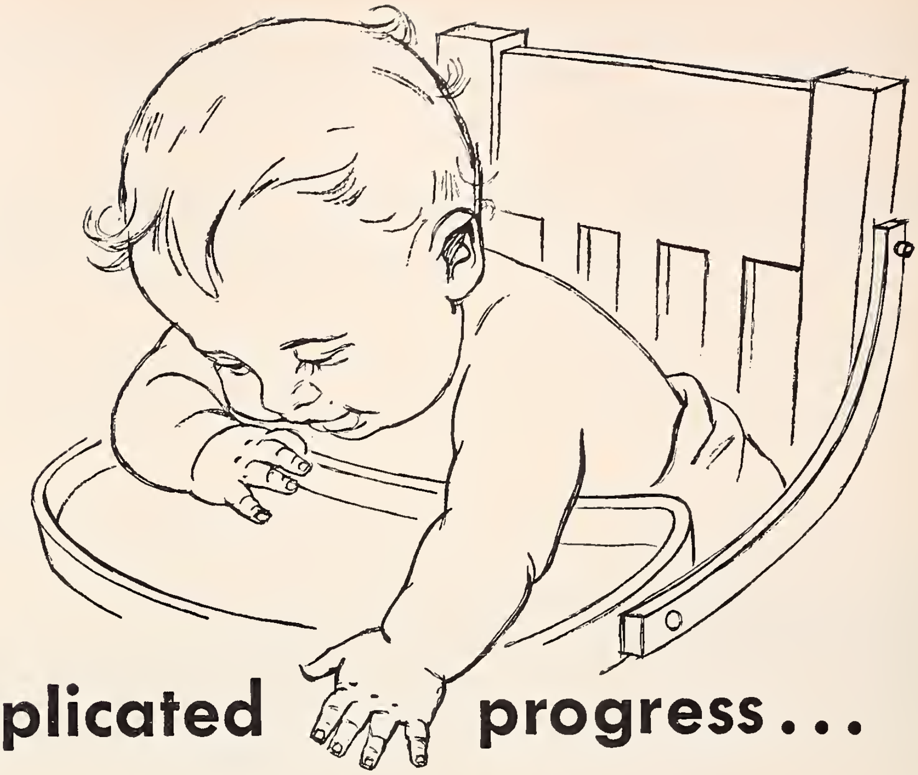
SCHOOL FOR NEURO-PSYCHIATRIC NURSING

To offset the existing universal shortage of nurses, Glenwood Hills conducts a one-year course in neuropsychiatric nursing. You have observed the skill and attitudes of our graduates and trainees. Recruit one or two in behalf of your profession as a "contribution" stipulating that we send them back to you when trained. We will. Meanwhile tuition, room and board are free.

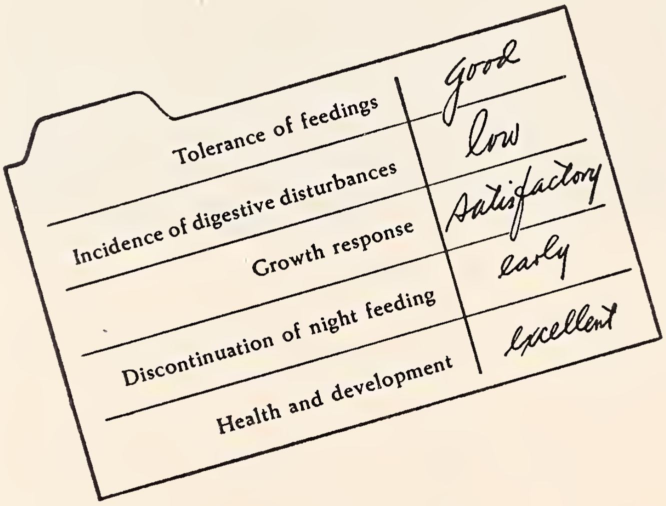
Glenwood Hills Neuro-psychiatric Hospital
School of Neuro-psychiatric Nursing

3901 Golden Valley Road, Minneapolis 22, Minnesota JUniper 2771

Helen Swenson Rascop, Director of Nurses



uncomplicated progress...



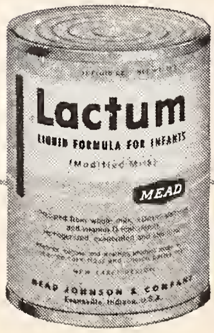
Tolerance of feedings	good
Incidence of digestive disturbances	low
Growth response	Satisfactory
Discontinuation of night feeding	early
Health and development	excellent

The uncomplicated nutritional progress[1] of infants fed Lactum® speaks for its sound rationale. Lactum is Mead's liquid formula made from whole milk and Dextri-Maltose.®

It provides generous milk protein for sturdy growth and sound tissue structure, with sufficient calories to spare protein and meet the infant's energy needs.

Lactum is convenient and easy to prepare—simply mix equal parts of Lactum and water for a formula supplying 20 calories per fluid ounce.

[1] Frost, L. H., and Jackson, R. L.: J. Pediat. 39: 585-592, 1951.



Lactum

MEAD

MEAD JOHNSON & COMPANY
Evansville 21, Ind., U. S. A.

dvertisements addressed to the general public . . .

hysician, you're in *good* hands"

eglect . . . delay. How many times, doctor, have you ared for patients . . . whose hope of recovery might ave been bright indeed . . . *but for neglect or delay in eeking your help?*

Undoubtedly, this occurs so often . . . and usually with ich tragic consequences . . . that many physicians view as the greatest problem facing medical science today.

Moreover, this problem may assume even greater gnificance with the rising incidence of the degenera- ve diseases. For in these conditions, neglect and delay, s you well know, are *directly* responsible for a heavy ll of life.

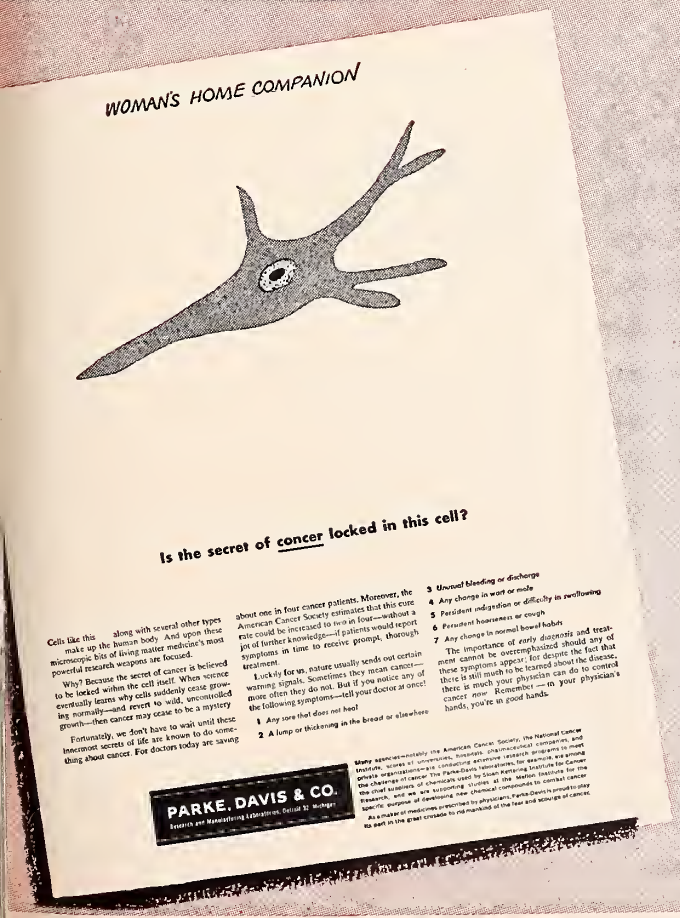
We believe you will agree that this problem deserves icreased and continuing emphasis. This is why Parke- avis will publish, throughout 1953, a series of adver- sements on the *patient's responsibility* in medical care.

These advertisements, four of which are reproduced ere, will appear in leading magazines reaching mil- ons of families. In them, this central theme will be mphasized:

That every individual, if he wants his physician's most effective help, must meet the doctor halfway. *He must not ignore symptoms, or delay treatment. He must act promptly . . . and be made to realize that "in the hands of your physician, you're in* good *hands."*

In addition, the advertisements will stress the fact that medicine has a vast store of new knowledge . . . and that this knowledge is constantly increasing through research by physicians, hospitals, public and private health organizations, and pharmaceutical companies.

A word about the preparation of these advertisements: They have been carefully written to avoid both the possibility of stimulating hypochondria and encouraging self-diagnosis. Equally important, the advertisements make no claims that might cause undue optimism or raise false hopes. We believe these are just the type of informative messages you will want your patients to read. Our efforts will be guided and encouraged by your continued interest and comments.



WOMAN'S HOME COMPANION

Is the secret of cancer locked in this cell?

Cells like this along with several other types make up the human body. And upon these microscopic bits of living matter medicine's most powerful research weapons are focused.

Why? Because the secret of cancer is believed to be locked within the cell itself. When science eventually learns why cells suddenly cease growing normally—and revert to wild, uncontrolled growth—then cancer may cease to be a mystery.

Fortunately, we don't have to wait until these innermost secrets of life are known to do something about cancer. For doctors today are saving about one in four cancer patients. Moreover, the American Cancer Society estimates that this cure rate could be increased to two in four—without a jot of further knowledge—if patients would report symptoms in time to receive prompt, thorough treatment.

Luckily for us, nature usually sends out certain warning signals. Sometimes they mean cancer—more often they do not. But if you notice any of the following symptoms—tell your doctor at once!

1 *Any sore that does not heal*
2 *A lump or thickening in the breast or elsewhere*
3 *Unusual bleeding or discharge*
4 *Any change in wart or mole*
5 *Persistent indigestion or difficulty in swallowing*
6 *Persistent hoarseness or cough*
7 *Any change in normal bowel habits*

The importance of *early diagnosis* and treatment cannot be overemphasized should any of these symptoms appear; for despite the fact that there is still much to be learned about the disease, there is much your physician can do to control cancer *now*. Remember—in your physician's hands, you're in *good* hands.

PARKE, DAVIS & CO.
Research and Manufacturing Laboratories, Detroit 32, Michigan

Many agencies—notably the American Cancer Society, the National Cancer Institute, scores of universities, hospitals, pharmaceutical companies, and private organizations—are conducting extensive research programs to meet the challenge of cancer. The Parke-Davis laboratories, for example, are among the chief suppliers of chemicals used by Sloan Kettering Institute for Cancer Research, and we are supporting studies at the Mellon Institute for the specific purpose of developing new chemical compounds to combat cancer.

As a maker of medicines prescribed by physicians, Parke-Davis is proud to play its part in the great crusade to rid mankind of the fear and scourge of cancer.

PARKE, DAVIS & CO.
Research and Manufacturing Laboratories, Detroit 32, Michigan

Even Thoughtful Men Overlook

The picture of the home, the story of the months ahead. The pressing needs for extra cash during periods of disability. The capital loss that extra cash can prevent. One Accident or One Illness Can

- ★ STOP YOUR INCOME
- ★ DOUBLE YOUR EXPENSES
- ★ WIPE OUT A YEAR'S SAVINGS

CR
AGENCY
Minneapolis

CASWELL-ROSS AGENCY

1177 N. W. Bank Building
Minneapolis 2, Minnesota
Minneapolis—MA 2585
St. Paul—ZE 2341

Insurors to:

Minnesota State Bar Association
Minnesota State Dental Association
Minnesota State Medical Association
Minnesota Society of C. P. A.
Minnesota State Pharmaceutical Assn.
Minnesota Auto Dealers Association
Minnesota Federation of Eng. Societies
Minnesota State Veterinary Medical Soc.
Hennepin County Medical Society
Hennepin County Bar Association
11th Judicial Bar Association
Minneapolis Association of Life Underwriters

Ramsey County Medical Society
Ramsey County Bar Association
St. Paul District Dental Soc.
Minneapolis District Dental Soc.
St. Cloud Dental and Stearns County Medical Society
Duluth District Dental Society
East Central Medical Society
St. Louis County Medical Society
West Central Dist. Dental Society
Northwest Proprietors Association
St. Paul Life Underwriters, Inc.

Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 36 **May, 1953** **Number 5**

Contents

CIVIL DEFENSE: A REPORT TO THE MEMBERSHIP.
Jan H. Tillisch, M.D., Rochester, Minnesota, and *John T. Smiley, M.D.*, Minneapolis, Minnesota.. 457

BRUCELLOSIS IN MAN.
Wendell H. Hall, M.D., Ph.D., Minneapolis, Minnesota 460

ANTIBIOTIC THERAPY IN BACTERIAL ENDOCARDITIS.
III. Penicillin O and Hypoallergenic Penicillins in Treatment of Subacute Bacterial Endocarditis.
Joseph E. Geraci, M.D., and *Phil R. Manning, M.D.*, Rochester, Minnesota 466

A LOOK BACKWARD.
Owen H. Wangensteen, M.D., Minneapolis, Minnesota 471

A STUDY OF MASSES IN THE RIGHT LOWER QUADRANT OF THE ABDOMEN.
J D Mortensen, M.D., and *J. Arnold Bargen, M.D.*, Rochester, Minnesota 481

ANALYSIS OF TUBERCULOSIS CASE REGISTERS IN MINNESOTA.
D. S. Fleming, M.D., M.P.H., Minneapolis, Minnesota 486

OBSCURE FEVER OF HYPERNEPHROMA.
Lyle V. Kragh, M.D., *Harold H. Joffe, M.D.*, *Arthur H. Wells, M.D.*, and *Ralph J. Eckman, M.D.*, Duluth, Minnesota 488

LABORATORY AIDS TO MEDICAL PRACTICE.
A Ray of Hope for a Change.
James S. McCartney, M.D., Minneapolis, Minnesota 490

PRESIDENT'S LETTER:
The Delegates Decide 492

EDITORIAL:
Polio Culture 493
American Federation of Medical Centers 493
Chemotherapy in Tuberculosis 494
The Distribution of Gamma Globulin 495

MINNESOTA DEPARTMENT OF HEALTH:
Distribution and Use of Gamma Globulin 496
Change in Vital Statistics Law to Affect Physicians Beginning July 1, 1953 499

MEDICAL ECONOMICS:
Reorganization Plan Goes into Effect 500
AMA Meeting Planned for New York........ 501
National Health Council Reviews Commission Report 502
Federal Government Underwrites Insurance 502

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS:
Physicians Licensed in 1952 503

MINNESOTA STATE MEDICAL ASSOCIATION:
Roster for 1953 509

MINNESOTA ACADEMY OF MEDICINE:
Meeting of November 12, 1952 542
Meeting of December 10, 1952 542
Meeting of January 14, 1953 544

REPORTS AND ANNOUNCEMENTS 545
WOMAN'S AUXILIARY 545
IN MEMORIAM 546
OF GENERAL INTEREST 550
BOOK REVIEWS 563

Contents of MINNESOTA MEDICINE copyrighted by Minnesota State Medical Association, 1953

Entered at the Post Office in Saint Paul as second class mail matter. Accepted for mailing at the special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 13, 1918.

MINNESOTA MEDICINE

OFFICIAL JOURNAL OF THE MINNESOTA STATE MEDICAL ASSOCIATION

Published by the Association under the direction of its Editing and Publishing Committee

Office of Minnesota State Medical Association,
496 Lowry Medical Arts Bldg., Saint Paul 2, Minnesota.

EDITING AND PUBLISHING COMMITTEE

E. M. HAMMES, Saint Paul
PHILIP F. DONOHUE, Saint Paul
L. M. EATON, Rochester
J. J. HEIMARK, Fairmont
C. L. OPPEGAARD, Crookston
T. A. PEPPARD, Minneapolis
H. A. ROUST, Montevideo
O. W. ROWE, Duluth
HENRY L. ULRICH, Minneapolis
A. H. WELLS, Duluth

EDITORIAL STAFF

CARL B. DRAKE, Saint Paul, Editor
GEORGE EARL, Saint Paul, Associate Editor
HENRY L. ULRICH, Minneapolis, Associate Editor

BUSINESS MANAGER

J. R. BRUCE

Annual Subscription—$3.00. Single Copies—$0.40. Foreign and Canadian Subscriptions—$3.50.

The right is reserved to reject material submitted for editorial or advertising columns. The Editing and Publishing Committee does not hold itself responsible for views expressed either in editorials or other articles when signed by the author.

Classified advertising—ten cents a word; minimum charge, $2.00; key number, 25c additional. Remittance should accompany order.

Display advertising rates on request.

Address all communications concerning the journal to Minnesota Medicine, 2642 University Avenue, Saint Paul 14, Minnesota. Telephone Nestor 2641.

A MODERN PRIVATE SANITARIUM

for the Diagnosis, Care and Treatment of Nervous and Mental Disorders

MAIN BUILDING—One of 10 Units in "Cottage Plan"

ST. CROIXDALE ON LAKE ST. CROIX

PRESCOTT, WISCONSIN

Located on beautiful Lake St. Croix, 18 miles from the Twin Cities, it has the advantages of both City and Country. Every facility for treatment provided, including recreational activities and occupational-therapy under trained personnel. Close personal supervision given patients, and modern methods of therapy employed. Inspection and cooperation by reputable physicians invited. Rates very reasonable. Illustrated folder on request.

Prescott Office
Prescott, Wisconsin
Howard J. Laney, M.D.
Tel. 39 and Res., 76

Consulting Neuro-Psychiatrists
Hewitt B. Hannah, M.D., Andrew J. Leemhuis, M.D.
527 Medical Arts Bldg., Tel. MAin 1357, Minneapolis, Minn.

Superintendent
Ella M. Leseman
Prescott, Wisconsin
Tel. 69

IN SPRING ALLERGIES . . .

Allay Distress

Patients suffering from Spring allergies can be relieved promptly of annoying symptoms—with NEO-ANTERGAN.

NEO-ANTERGAN effectively blocks the tissue histamine receptors, affording quick comfort with a minimum of sedation or other undesirable effects.

Promoted exclusively to the profession, NEO-ANTERGAN is available only on your prescription.

Your local pharmacy stocks NEO-ANTERGAN Maleate in 25 and 50 mg. coated tablets in bottles of 100, 500, and 1,000.

The Physician's Product

Neo-Antergan®

MALEATE

(PYRILAMINE MALEATE, MERCK)

COUNCIL ACCEPTED

Research and Production
for the Nation's Health

MERCK & CO., INC.
Manufacturing Chemists
RAHWAY, NEW JERSEY

"Anxiety is the great modern plague"

By providing mild synergistic sedation at three important sensory and reflex levels of the nervous system (brain, spinal cord, and neuromuscular junction of smooth muscle) instead of focusing relatively intensive pharmacological action at but one of these levels;

Completely balanced psychosomatic sedation for the treatment of Visceroneurosis is obtained

"Just remember that it's not what they eat that's causing their ulcers; it's what's eating them."

Synergism in clinical medicine is sufficiently rare to warrant special attention whenever demonstrated or even indicated.

'MYOTHINE'*

Tablets

UNDUPLICATED IN CLINICAL
ACCEPTANCE
IN
Gastro-Intestinal
MANAGEMENT

With this in hand

'MYOTHINE'
TABLETS
C. R. Canfield & Co.

Formula:

Each tablet contains:

Mephenesin	Gr. 5
Phenobarbital	Gr. ¼

In addition, each tablet contains:

Atropine Sulfate	.0227 mg.	Equal to 7½ minims of Tr. Belladonna U.S.P. in alkaloidal strength.
Hyoscyamine Sulfate	.1476 mg.	
Hyoscine Hydrobromide	.0065 mg.	

DOSAGE:
One tablet four times a day one-half hour before meals and at bedtime. Dosage may be increased depending upon effect desired.

The
Internist
is assured of
Dependability in Smooth Muscle Sedation
with broad, sustained action

WHEN SEDATION IS A PROBLEM
IN

Frequently encountered indications:

- ✶ Peptic Ulcer
- ✶ Psychosomatic factor in visceral spasm
- ✶ Worry, anxiety, fear
- ✶ Functional gastro-intestinal spasm
- ✶ Pyloro and cardiac spasm
- ✶ Biliary and Ureteral colic
- ✶ Spastic colon
- ✶ Nervous Indigestion
- ✶ Intestinal Hypermotility
- ✶ Hypertension
- ✶ Hyperemesis gravidarum
- ✶ Dysmenorrhea
- ✶ Bronchial spasm
- ✶ Motion sickness (sea, car, and air)
- ✶ Tenesmus
- ✶ Acute and Chronic colitis

References:

1. Kramer, P., and Ingelfinger, F. J.: Med. Clin. North Amer., 32:1227, 1948
2. Godman, H. E., and Adriani, J.: J.A.M.A., 141:754 (1949).
3. Schlan, L. S., and Unna, K. R.: J.A.M.A., 140:672 (1949).
4. Dixon, H. H., et al.: Am. J. M. Sc., 220:23 (1950).
5. Goodman, L., and Gilman, A.: The Pharmacological Basis of Therapeutics. New York: The Macmillan Co., 1941.
6. Gammon, G. D., and Churchill, J. A.: Am. J. M. Sc., 217:143 (1949).

C. R. Canfield & Co.
2736-38 Lyndale Avenue South
Minneapolis 8, Minnesota
Pharmaceuticals Originated by Clinical Research

Exclusive trademark of the C. R. Canfield & Co.

Meat...

and the Low Sodium Diet

The beneficial effect of sodium restriction in the management of hypertension and many types of cardiac disease is firmly established. A low sodium diet aids in preventing edema and frequently leads to a significant reduction in arterial tension.

To emphasize the importance of sodium restriction and to enable the physician to present his patient with an informative discussion of the subject, The American Heart Association has just published a valuable pamphlet entitled "Food For Your Heart."* Covered also in this booklet is the importance of weight reduction in the management of the cardiac patient.

Dietary recommendations for three levels of sodium restriction are given. In all of them, meat is an important constituent of the diet. In the diet providing moderate sodium restriction (0.5 to 1.5 Gm. of sodium), 4 to 6 ounces of unsalted meat, fish or fowl are allowed. In severe restriction (0.5 Gm. sodium), 3 to 4 ounces of meat are permitted daily. The weight reduction-moderate sodium restriction diet calls for 5 to 6 ounces of meat daily.

This booklet again emphasizes the valuable application of meat in the dietary management of cardiac disease, hypertension, and obesity. Since, as the manual emphasizes, infectious diseases and such scourges as typhoid fever have now been controlled with antibiotics, chemotherapeutic agents and modern sanitation, "many physicians and scientists consider nutrition the most important environmental factor in health."

Meat, with its wealth of high quality protein, B complex vitamins and important minerals, plays an important role in the aim toward better national health. That the generous consumption of meat by the American people is a significant factor in attaining this goal is reflected in the statement that "most physicians feel that the high American consumption of protein is a good thing."

---

*Food for Your Heart, a Manual for Patient and Physician, Department of Nutrition, Harvard School of Public Health, Harvard University, The American Heart Association, Inc., New York, 1952. Copies available through local Heart Association.

The Seal of Acceptance denotes that the nutritional statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

American Meat Institute
Main Office, Chicago...Members Throughout the United States

Upjohn

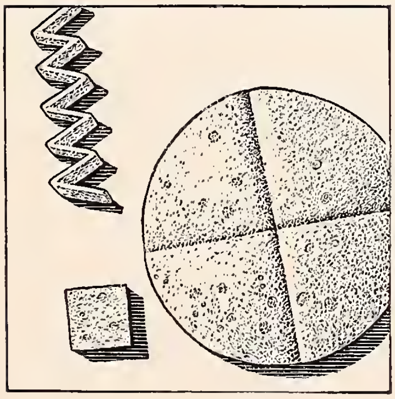
absorbable
hemostat:

Gelfoam

Trademark Reg. U. S. Pat. Off. BRAND OF ABSORBABLE GELATIN SPONGE

Available in a large variety of sizes and forms, including:
Surgical sponges
Compressed surgical sponges
Dental packs
Gynecologic packs
Nasal packs
Prostatectomy cones
Tumor diagnosis kit

The Upjohn Company, Kalamazoo, Michigan



A Marked Advance

in Oral Estrogen therapy

no odor or after-odor

no taste or after taste

HAVE you tested the new degrees of effectiveness and acceptability provided by SULESTREX?

Results are prompt, constant, and predictable . . . "*with an amazingly low incidence of side reactions.*"[1] Regardless of the intensity of treatment, there is no possibility of esthetic "embarrassment."

Measure these advantages when prescribing for your next menopausal patient. SULESTREX (piperazine estrone sulfate, Abbott) provides the natural estrogen, estrone, in pure crystalline form. It is not a mixture of estrogenic agents of variable potencies. SULESTREX is stable, water-soluble, odorless and tasteless.

You may choose from three prescribing forms: Tablets,* Sub-U-Tabs,** and Elixir.* Try it soon, with this confidence: you can't prescribe a more effective oral estrogen.

Abbott

Sulestrex®

Piperazine

---

* AMA Council Accepted
** T.M. for Sublingual Tablets, Abbott
1. Reich, W. J. et al. (1952), A Recent Advance in Estrogenic Therapy. II. Amer. J. Obst. & Gynec., 64:174, July.

1-164B

". . . and please get people to pay what they owe Daddy. Mommy says that's why he's so cross."

Are you burdened by a heap of uncollected accounts? The Professional Credit Protective Bureau can really help you.

The Professional Credit Protective Bureau is collecting thousands of past due accounts in the professional field.

The Professional Credit Protective Bureau is a credit control organization that sees that the patient pays direct to the supplier of services. In other words you PAY THE COLLECTION ORGANIZATION AFTER YOUR PATIENT HAS PAID YOU and neither you nor the debtor is embarrassed.

Ninety-two leading trade associations . . . including many medical and dental organizations . . . are recommending this credit control system as part of their service to members.

It will pay you to investigate this tried and true system. Use the attached coupon.

Professional Credit Protective Bureau
724 Metropolitan Bldg., Dept. MM 5-53
Minneapolis 1, Minn.
Please send me full details on the operation of your collection service.

Name ....

Address ....

City .... State ....

Division of
The I.C. System
724 Metropolitan Bldg.
Minneapolis 1, Minn.

"PREMARIN"

..."sense of well-being"...

Relief of menopausal symptoms was complete in practically 96 per cent of patients receiving "Premarin" and "General tonic effects were noteworthy..."*

"PREMARIN"® *in the menopause*

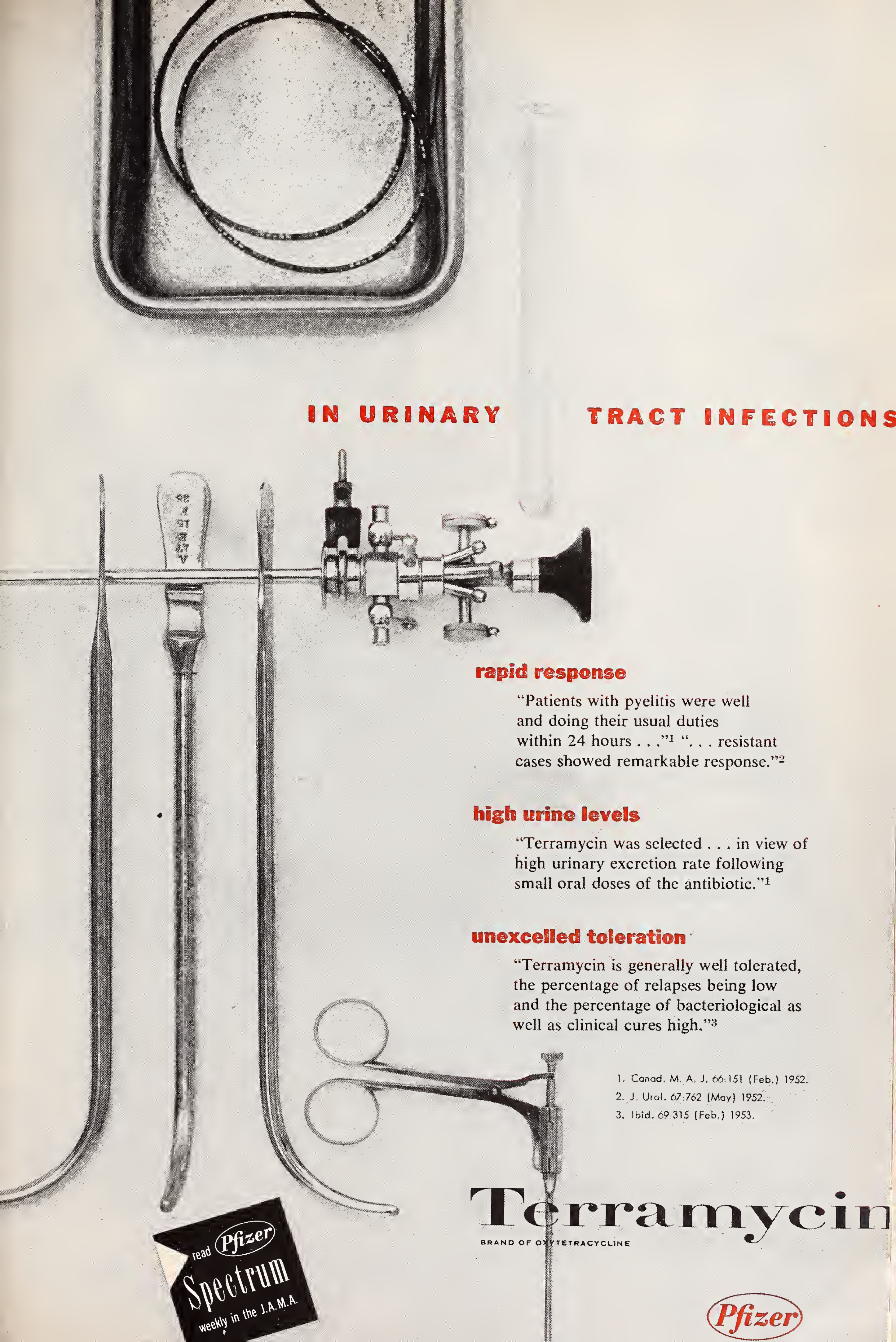
Estrogenic Substances (water-soluble) also known as Conjugated Estrogens (equine). Tablets and liquid.

*Perloff, W. H.: Am. J. Obst. & Gynec. *58*:684 (Oct.) 1949.

5309

Ayerst

AYERST, McKENNA & HARRISON LIMITED • *New York, N. Y.* • *Montreal, Canada*



IN URINARY TRACT INFECTIONS

rapid response

"Patients with pyelitis were well and doing their usual duties within 24 hours . . ."[1] ". . . resistant cases showed remarkable response."[2]

high urine levels

"Terramycin was selected . . . in view of high urinary excretion rate following small oral doses of the antibiotic."[1]

unexcelled toleration

"Terramycin is generally well tolerated, the percentage of relapses being low and the percentage of bacteriological as well as clinical cures high."[3]

1. Canad. M. A. J. 66:151 (Feb.) 1952.
2. J. Urol. 67:762 (May) 1952.
3. Ibid. 69:315 (Feb.) 1953.

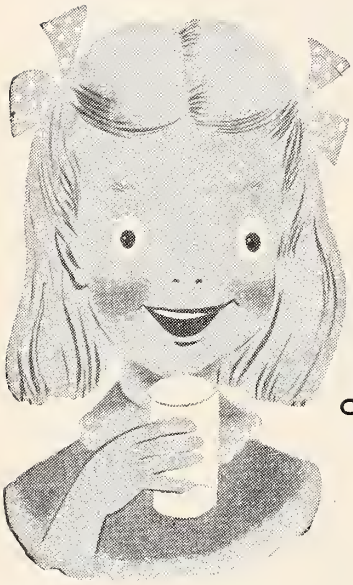
Terramycin
BRAND OF OXYTETRACYCLINE

read Pfizer Spectrum weekly in the J.A.M.A.

Pfizer

Children take it without the least bit of fuss...

SWALLOWED WHOLE



CHEWED–
OR IN FOOD
OR LIQUID

DISSOLVED
ON TONGUE

- The Best Tasting Aspirin you Can Prescribe.
- The Flavor Remains Stable Down to the Last Tablet in the Bottle.
- 24 Tablet Bottle . . . 2½ gr. each 15¢

2½ gr. ◯ ⇨ ◗ 1¼ gr.

Grooved Tablets—
Easily Halved

NEW FLAVORED
CHILDREN'S SIZE
BAYER ASPIRIN

We will be pleased to send samples on request
THE BAYER COMPANY DIVISION of Sterling Drug Inc., 1450 Broadway, New York 18, N.Y.

FLAVORED
Children's Size
BAYER
ASPIRIN
BAYER
Genuine
24 TABLETS
2½ gr. ea.
PRICE 15¢

SMOOTH

diuresis

With suitably regulated doses, Thiomerin promotes gentle, sustained diuresis. Self-administration, under the physician's guidance*, is as practical as with insulin.

Thiomerin®

SODIUM

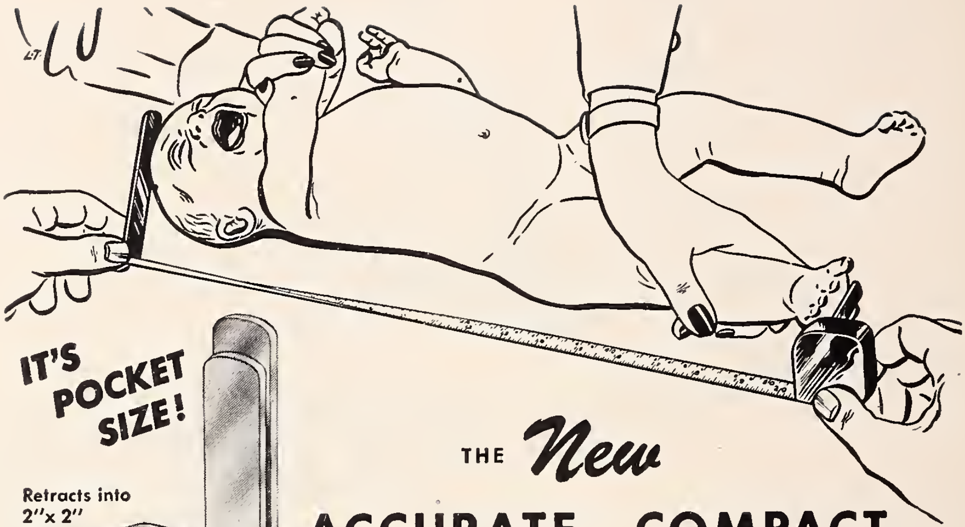
MERCAPTOMERIN SODIUM WYETH

Council-Accepted Mercurial Diuretic for Subcutaneous, Intramuscular, or Intravenous Injection.

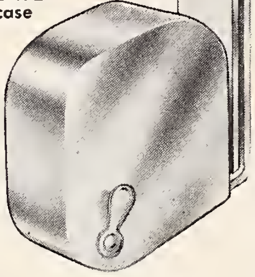
*A supply of printed instructions for patients will be sent to physicians on request.

ACCEPTED COUNCIL ON PHARMACY AND CHEMISTRY AMERICAN MEDICAL ASSOCIATION

Wyeth®
Philadelphia 2, Pa.



IT'S POCKET SIZE!



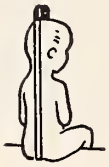
Retracts into 2"x 2" case

THE *New*

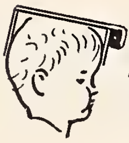
ACCURATE, COMPACT
INFA-RULE

Designed by Walter Levy, M.D.

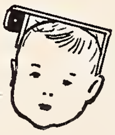
For the PEDIATRICIAN, SPECIALIST and the GENERAL PRACTITIONER



MEASURING STEM LENGTH



MEASURING ANTERO-POSTERIOR DIAMETER

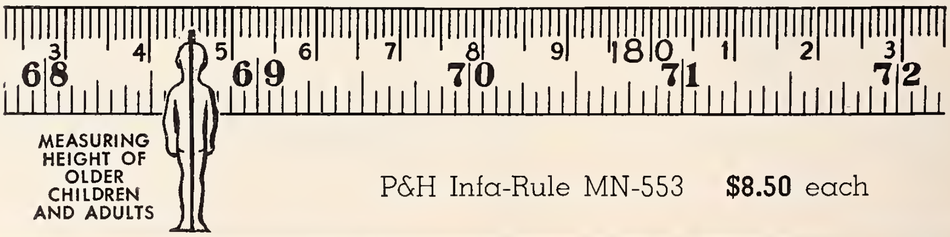


MEASURING TRANSVERSE DIAMETER

Accurately measures crown-heel and stem length of infants as well as transverse and anteroposterior diameters of the skull. Rule is made of highest quality flex-rigid steel tape with one arm fixed and one adjustable arm. The rule is extended until the arms contact the points between which measurement is to be made . . . the rule is locked by means of a lever on case and the reading in centimeters or inches recorded. Release of lever retracts rule into the compact chromium plated case . . . easily carried in pocket or bag. Older children and adults (over six feet) can be measured when standing on starting arm by extending tape vertically until case arm meets crown.

Professional Price . . . **$8.50**

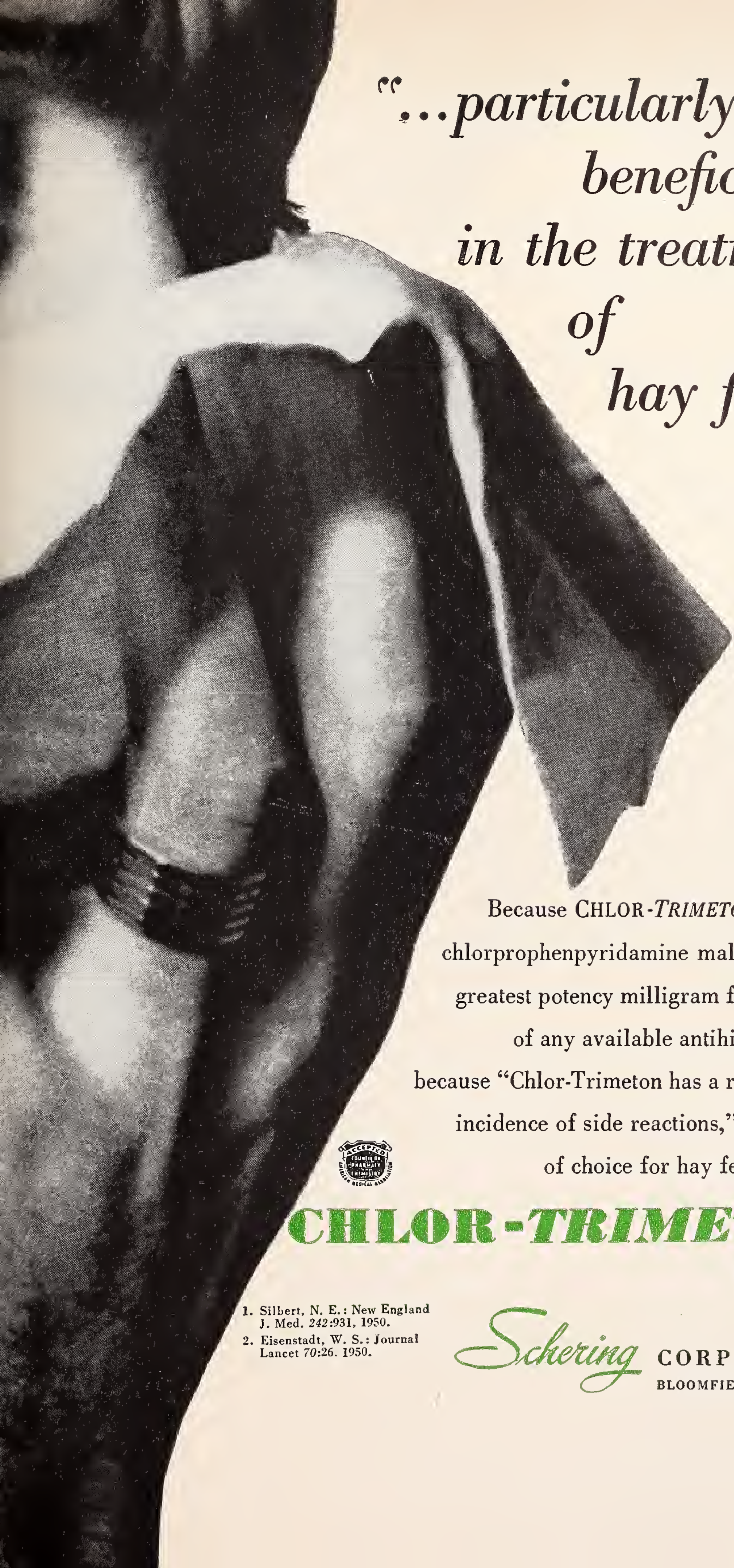
ACTUAL SIZE SECTION OF RULE SHOWING GRADATIONS IN CENTIMETERS, FEET, INCHES, SIXTEENTHS



MEASURING HEIGHT OF OLDER CHILDREN AND ADULTS

P&H Infa-Rule MN-553 **$8.50** each

PHYSICIANS AND HOSPITALS SUPPLY CO., Inc.
1400 HARMON PLACE, MINNEAPOLIS 3, MINNESOTA



"...particularly beneficial in the treatment of hay fever."[1]

Because CHLOR-*TRIMETON*® maleate, chlorprophenpyridamine maleate, has the greatest potency milligram for milligram of any available antihistamine, and because "Chlor-Trimeton has a relatively low incidence of side reactions,"[2] it is a drug of choice for hay fever patients.

CHLOR-*TRIMETON*

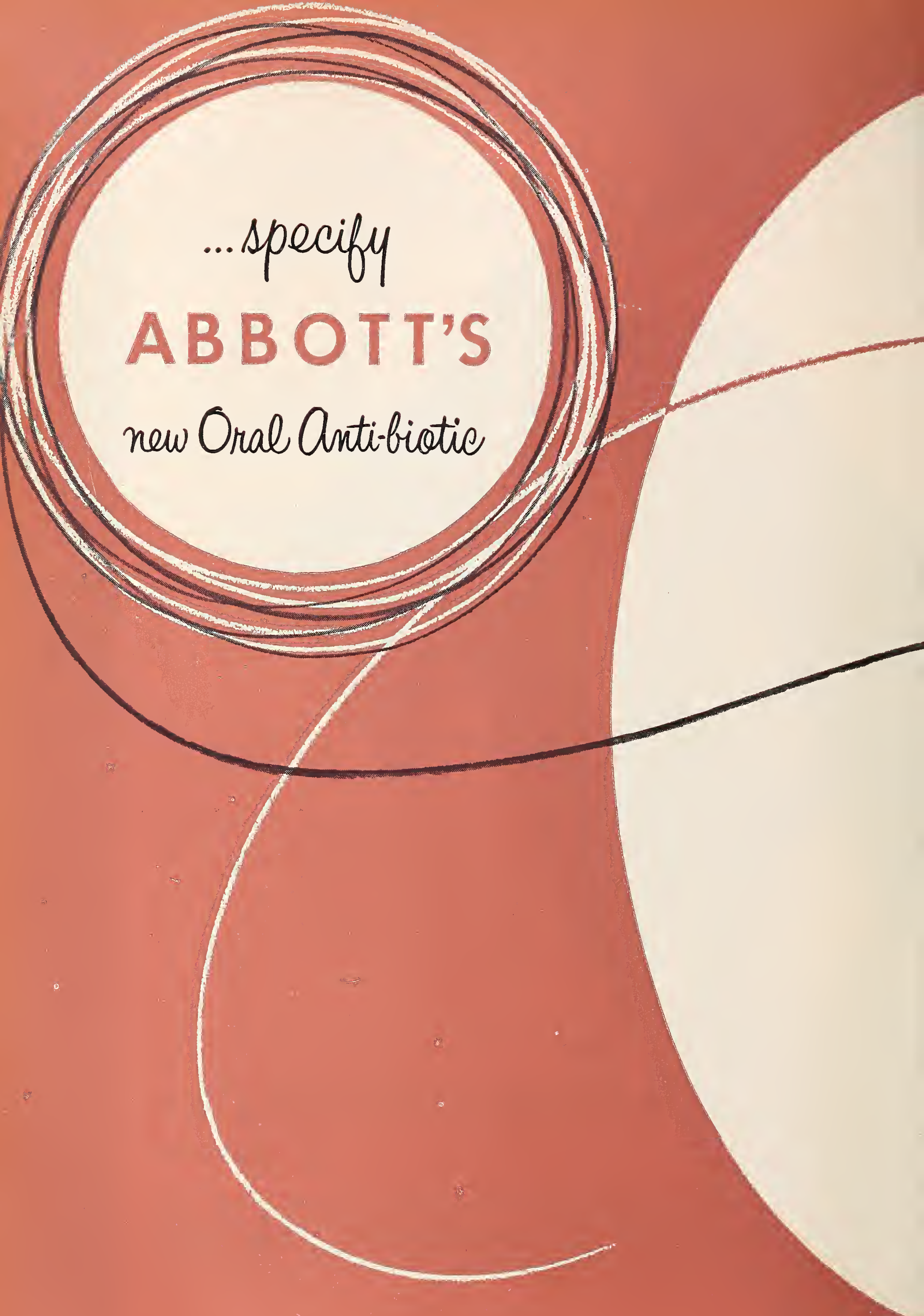
maleate

1. Silbert, N. E.: New England J. Med. *242*:931, 1950.
2. Eisenstadt, W. S.: Journal Lancet *70*:26. 1950.

Schering CORPORATION
BLOOMFIELD, NEW JERSEY

CHLOR-TRIMETON

SCHERING


...specify
ABBOTT'S
new Oral Anti-biotic

Especially effective against gram-positive organisms resistant to other antibiotics.

Low toxicity; reported side effects infrequent.

Special "high-blood-level" coating.
ERYTHROCIN, *0.1-Gm. (100-mg.) Tablets, bottle of 25.*

ERYTHROCIN

TRADE MARK

(Erythromycin, Abbott)

ICATIONS Pharyngitis, tonsillitis, scarlet fever, erysipelas, pneumococcic pneumonia, osteomyelitis, pyoderma. *Also other infections caused by organisms* susceptible to its action, including staphylococci, streptococci and pneumococci.

DOSAGE Total daily dose of 0.8 to 2 Gm., depending on severity of the infection. A total daily dose of 0.6 Gm. is often adequate in the treatment of pneumococcic pneumonia. *For the average adult* the initial dose is 0.2 Gm. to be followed by doses of 0.1 or 0.2 Gm. followed by doses in the same range every four to six hours. *For severely ill patients* doses up to 0.5 Gm. may be repeated at six-hour intervals if necessary. Satisfactory clinical response should appear in 24 to 48 hours if the causative organism is susceptible to ERYTHROCIN. Continue for 48 hours after temperature returns to normal.

Abbott

1. McGuire et al. (1952), J. Antibiotics & Chemo., 2:281, June.
2. Heilman et al. (1952), Proc. Staff Meet. Mayo Clin., 27:385, July 16.
3. Haight and Finland (1952), New Eng. J. Med., 247:227, Aug. 14.

1-139

Beautiful, spacious . . . and now with automatic transmission

The

JAGUAR

Mark VII **SEDAN**

$4555* Tax Paid and Delivered

Here is America's most preferred imported car . . . the luxurious 160 H.P. MARK VII Sedan. Now with automatic transmission and the exclusive sliding roof feature that makes it doubly enjoyable, the MARK VII was chosen in a recent FORTUNE survey as "the foreign car that readers would most like to own." Powered by the famous Jaguar XK120 twin-overhead camshaft engine . . . with a highly polished walnut instrument panel and deep pile carpeting, the MARK VII has the beauty and spaciousness that brings new luxury to today's motoring!

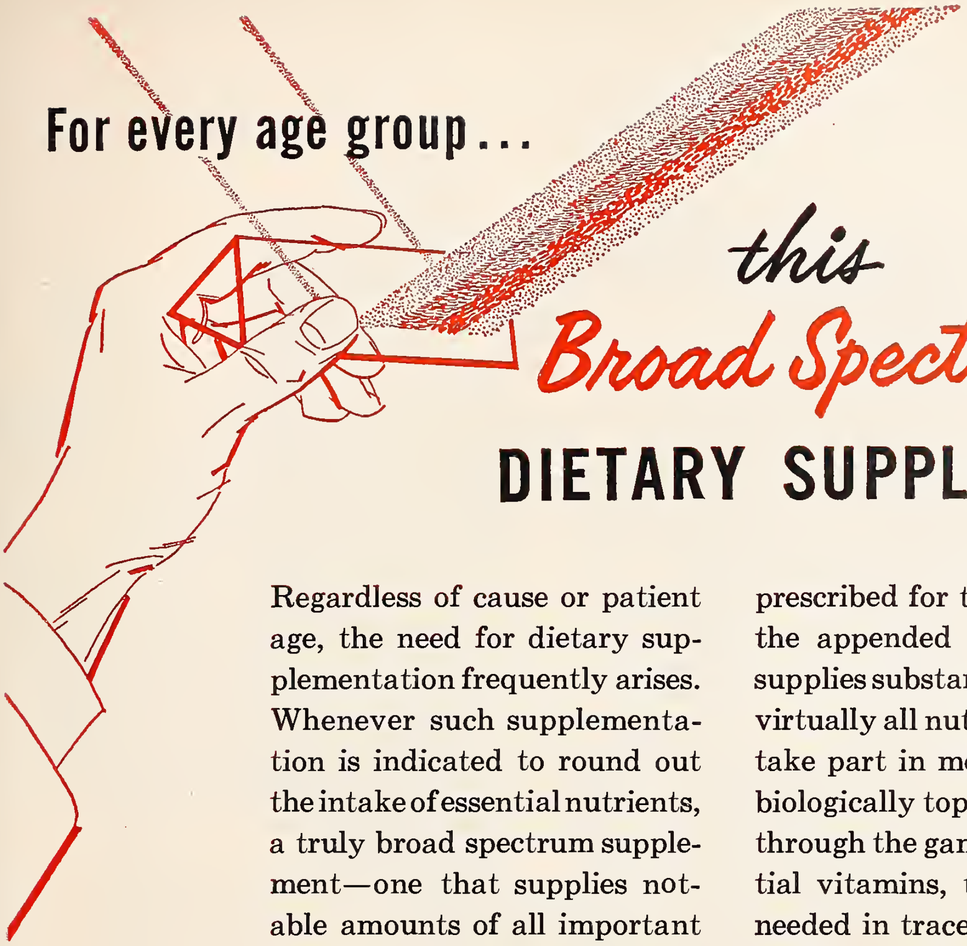
*(*price includes heater, turn indicators, automatic transmission)*

Available now at

ARCHIE WALKER JR., IMPORTED MOTORS

4317 Excelsior Boulevard, St. Louis Park, Minn. **WH. 6490** **WH. 1101**

For every age group...



this *Broad Spectrum* DIETARY SUPPLEMENT

Regardless of cause or patient age, the need for dietary supplementation frequently arises. Whenever such supplementation is indicated to round out the intake of essential nutrients, a truly broad spectrum supplement—one that supplies notable amounts of all important nutrients—will serve the patient optimally.

Ovaltine in milk, a delicious food drink, has long been widely prescribed for this purpose. As the appended table shows, it supplies substantial amounts of virtually all nutrients known to take part in metabolism, from biologically top-grade proteins, through the gamut of the essential vitamins, to the minerals needed in trace amounts.

Whenever the patient's nutritional state must be improved, Ovaltine deserves the physician's first consideration.

THE WANDER COMPANY, 360 N. MICHIGAN AVE., CHICAGO 1, ILL.

Ovaltine

Three Servings of Ovaltine in Milk Recommended for Daily Use Provide the Following Amounts of Nutrients

(Each serving made of ½ oz. of Ovaltine and 8 fl. oz. of whole milk)

MINERALS	
*CALCIUM	1.12 Gm.
CHLORINE	900 mg.
COBALT	0.006 mg.
*COPPER	0.7 mg.
FLUORINE	3.0 mg.
*IODINE	0.15 mg.
*IRON	12 mg.
MAGNESIUM	120 mg.
MANGANESE	0.4 mg.
*PHOSPHORUS	940 mg.
POTASSIUM	1300 mg.
SODIUM	560 mg.
ZINC	2.6 mg.

VITAMINS	
*ASCORBIC ACID	37 mg.
BIOTIN	0.03 mg.
CHOLINE	200 mg.
FOLIC ACID	0.05 mg.
*NIACIN	6.7 mg.
PANTOTHENIC ACID	3.0 mg.
PYRIDOXINE	0.6 mg.
*RIBOFLAVIN	2.0 mg.
*THIAMINE	1.2 mg.
*VITAMIN A	3200 I.U.
VITAMIN B_{12}	0.005 mg.
*VITAMIN D	420 I.U.

*PROTEIN (biologically complete)	32 Gm.
*CARBOHYDRATE	65 Gm.
*LIPIDS	30 Gm.

*Nutrients for which daily dietary allowances are recommended by the National Research Council

PROOF WITH ONE PUFF?

ESTABLISHED OVER 100 YEARS
PHILIP MORRIS & Co. LTD. INC.
FINEST SELECTION
SPECIAL BLEND
MADE IN U.S.A.
PHILIP MORRIS

So distinct is the difference between Philip Morris and *any* other leading brand, that we believe you will notice it with a single puff. Won't you try this simple test, Doctor, and see?

Take a PHILIP MORRIS and any other cigarette

1. Light up either one first. Take a puff—get a good mouthful of smoke—and s-l-o-w-l-y let the smoke come directly through your nose.
2. Now, do exactly the same thing with the other cigarette.

You will notice a distinct difference between PHILIP MORRIS and any other leading brand.

Philip Morris

Philip Morris & Co., Ltd., Inc., 100 Park Avenue, New York 17, N. Y.

Large Amounts of Protein in Small Volume

Adequate protein nutrition has been found essential to:

- all types of wound healing, including the healing of fractures,
- adequate functioning of intestinal anastomoses,
- repair of regenerating parenchymal organs such as the liver,
- resistance to hepatotoxins and other injurious agents,
- maintenance of normal fluid distribution.

ESSENAMINE®

Compound

SMOOTH, MICRO-ATOMIZED PROTEIN CONCENTRATE FOR ORAL USE

Supplies 3 times as much protein as meat --weight for weight.

Supplied in three forms:

Essenamine Powder Unflavored,
7½ and 14 oz. glass jars.

Essenamine Compound Powder
(with carbohydrate 25%), Vanillin Flavored,
1 lb. glass jars.

Essenamine Compound Granules
(with carbohydrate 30%), Vanillin Flavored,
7½ oz. and 1 lb. glass jars.

Winthrop-Stearns INC.
NEW YORK 18, N. Y.   WINDSOR, ONT.

Essenamine, trademark reg. U. S. & Canada

1 *Reason for the Continuing Decline in Maternal Morbidity and Mortality . . .*

Eli Lilly and Company
Indianapolis 6, Indiana, U.S.A.

100 No. 1572
POISON
Tablets
ERGOTRATE
MALEATE
(Ergonovine Maleate,
U. S. P., Lilly)
1/320 gr. (0.2 mg.)
CAUTION—Federal law prohibits dispensing without prescription.
000
AX-15131-B
Lilly
ELI LILLY AND COMPANY
INDIANAPOLIS, U. S. A.

Lilly

For sustained contraction of the postpartum uterus

AMPOULES AND TABLETS

Ergotrate Maleate

(ERGONOVINE MALEATE, U. S. P., LILLY)

Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 36 May, 1953 Number 5

CIVIL DEFENSE: A REPORT TO THE MEMBERSHIP

JAN H. TILLISCH, M.D.
Rochester, Minnesota
and
JOHN T. SMILEY, M.D.
Minneapolis, Minnesota

CIVIL defense is like virtue—everyone is for it but comparatively few people do much about it. Yet civil defense is a highly personal necessity. In any type of disaster, you, your family or your community may be involved.

The need for civil defense is apparent with the negation of our natural geographic defenses by intercontinental bombers and guided missiles. This means that whether we are engaged in a hot war, a cold war or no war, we can no longer depend on oceans for protection; thus, a scheme must be evolved for civil defense that will be effective and long standing. Adequate civil defense offers a chance for survival but also acts as a deterrent to the enemy. One of the factors that led Hitler to decide against invasion of England was the well-co-ordinated program of civil defense present in Great Britain.

More specifically, the need for civil defense is evident in view of the weapons now available. The atomic bomb is the most imposing of the new array of weapons, and many civil-defense activities have been pointed toward defense against and survival of disasters caused by atomic bombs. However, this country should not prepare for one emergency to the exclusion of all others. High-explosive bombing in World War II reached a new and appalling degree of efficiency. Chemical warfare is a threat that assumes terrifying proportions with the realization that chemical weapons can be delivered by plane or guided missile into the midst of an unsuspecting and unprepared people. This is also true of bacteriologic warfare, a method as yet untried. Finally, the actual invasion of the United States by enemy troops is a possibility that cannot be ignored. Thus, it can be seen that many aspects are present in civil defense, but one recurrent need appears in all, namely, the requirement of a medical program.

Less horrifying than the possibilities just mentioned but more likely to occur is a local storm, fire or flood of such magnitude that local facilities cannot cope with it. Such possibilities constitute an ever-present problem and emphasize the need for not only an efficient and well-co-ordinated medical program for use in time of war but also placement of such a program on a permanent basis.

The Minnesota Civil Defense Law

In Minnesota, civil defense has been recognized by law as a governmental responsibility. In 1951, the legislature established the Civil Defense Advisory Council and appropriated funds for the organization and operation of a permanent State Department of Civil Defense. The same law stated that every municipality must appoint a director of civil defense and create a civil-defense organization. It authorized the levying of taxes to finance community work in civil defense.

The director of the Minnesota Department of Civil Defense is Colonel E. B. Miller, who was appointed by the governor. Permanent headquarters have been established at 1643 Rice Street, St. Paul 3, Minnesota. Regional offices have been established in St. Paul, North Mankato, St. Cloud, Bemidji and Hibbing.

Dr. Tillisch is chairman of the Committee on Military Affairs, Minnesota State Medical Association.

Dr. Smiley is Director, Office of Health Service and Special Weapons Defense, Minnesota Department of Civil Defense.

The State Department of Civil Defense is a coordinating agency in predisaster planning; it would have a supporting role should an attack occur. The operating cost of the State Department of Civil Defense is borne by the state without help from the federal government. Likewise the operating cost of departments of civil defense in cities and villages must be paid by the local community. From federal sources, $450,000 was allocated to Minnesota for the purchase of medical supplies and equipment to be stockpiled for possible future use. However, these funds were made available only when they were matched dollar for dollar by the state or by its component municipalities. No outright grants have been made to Minnesota or any other state for purposes of civil defense.

From an appropriation made in 1951 by the legislature to purchase organizational equipment for civil-defense units, $10,000 has been used to match federal money in the purchase of medical supplies. This was spent to equip twenty teams manning mobile first-aid stations. The three largest cities in the state have matched collectively slightly less than $7,000 for medical supplies. It should be clearly understood that the civil-defense plan in Minnesota does not include requests for huge sums of money. It is based on the belief that existing local resources should be used, supplemented only by the acquisition of equipment and supplies peculiar to civil-defense operation and not normally available.

The Medical Civil Defense Plan

Through the Civil Defense Medical Advisory Committee, the Minnesota State Medical Association was given a definite responsibility for the initiation of medical civil-defense plans. The Committee on Military Affairs was in turn designated to work with the Minnesota Department of Health and with a committee of the Minnesota Hospital Association in the development of detailed plans. In its approach to the problem of creation of a really practical, long-term, simple plan for statewide application, this group decided to set up a single hypothetic situation and then to develop a scheme to meet it. The hypothetic situation was a simultaneous attack with atomic bombs on the Twin Cities and Duluth.

Emergency medical care apparently was the most urgent and difficult problem, so this was tackled first. This emergency medical care divided itself naturally into four categories as follows:

1. Self-help—assistance given to its injured by the stricken community itself.
2. Mutual aid—assistance given to the injured of a stricken community by other communities immediately adjacent to it.
3. Mobile support—assistance given to the injured of a stricken community by teams brought under state control from outlying communities.
4. Fixed support—assistance given to the injured of a stricken community by an outlying community that receives them into its own home facilities.

Beginning with the last of the four categories, a plan was prepared called "The Support of the Twin Cities and Duluth in the Emergency Medical Care Phase of Civil Defense." This plan was designed to provide a pattern of operation for the whole state in the fixed-support portion of the operation. It designated seventy-eight communities as the points at which definitive hospitalization and medical care are to be provided. It also directed that these communities be organized to receive an overwhelming number of medical evacuees. It prescribed routes of evacuation from the areas of disaster and asked that each community organize a team to control traffic. It prescribed in a general way the medical responsibilities of each region in the state. This plan was approved by the Civil Defense Advisory Council on February 24, 1952. Copies have been sent to every member of the Minnesota State Medical Association.

At the same time, the Council approved the outline of a plan to deal with the mobile-support portion of the operation. On September 1, 1952, that plan was launched. It provided for the organization of the previously mentioned twenty mobile first-aid teams that could be rushed to the periphery of a region of disaster to support local facilities. The communities selected as sites for the organization of these teams are:

1. Stillwater
2. Red Wing
3. Northfield
4. Owatonna
5. St. Peter
6. Hutchinson
7. Anoka
8. Buffalo
9. Willmar
10. Princeton
11. Cambridge
12. Brainerd
13. Cloquet
14. Bemidji
15. Grand Rapids
16. Hibbing
17. Ely
18. Virginia
19. Faribault
20. Mankato

The equipment for these teams has been ordered and has begun to arrive at the State Training School in Red Wing, where it is to be sorted, repacked and stored temporarily. It was purchased with the combination of federal and state funds previously referred to. The civil-defense directors of the designated communities must select the captains of the teams, who are to be physicians, and must take the initiative in the organization of the team in each community. Selection of the sites for the locations of teams has been influenced by the probability that the Twin Cities and Duluth will be the most likely targets and will have the most acute needs. The plan assumes, however, that these teams providing medical care will be available to go to the support of any community in Minnesota that suffers a disaster with which it cannot cope. The same is true of the plan for fixed support. It is necessary only to rearrange the routes of evacuation to produce a plan for the support of any community in the state.

Additional plans must be developed. At present some ideas are being discussed regarding the creation of agreements for mutual aid. Other phases of medical operations in civil defense include the following: (1) ordinary medical care of the populace in regions removed from disaster; (2) medical care and hospitalization in refugee camps; (3) medical care of civil-defense forces; (4) treatment and handling of casualties of chemical attack and (5) detection of radioactivity and handling and treatment of persons contaminated with radioactive materials.

All these factors must be considered in the light of conditions imposed by the hypothetic disaster, and plans must be developed to cover these eventualities as far as possible within the limitations of probable resources of the state and the ability of the committees to see clearly the problems to be expected.

Role of the Individual Physician

The importance of the physician in state civil defense is apparent from the plans mentioned. The physician's place in the community and his responsibility for the care of his fellow man makes it necessary for him to give the program full support. It appears likely that every able-bodied physician in civilian practice in the state can expect to be asked to take part in civil defense, in either a key position or a supporting role. Even if the physician is not called on now for active participation in the program of preparedness, he should realize that he is part of the reserve that may be called on to put these plans into action. Therefore, all physicians in the state should be informed about and interested in all phases of civil defense. They should respond promptly and cheerfully to requests for counsel and for active participation in the civil-defense activities in their community.

The physician can aid in civil defense in other ways because of his position as a leader and medical adviser in his community. The first-aid program of the American Red Cross should be encouraged and given all possible support. This applies most strongly to recruitment of donors for the blood program. Education of the community in regard to the medical aspects of civil defense is a physician's responsibility. This may be discharged through individual discussion with local citizens or talks to various organizations. The physician should keep informed about latest developments in the medical aspects of civil defense by reading and by attendance at medical meetings. By such methods, we, the physicians who form the keystone of civil defense, can give effective support to this important matter.

WHAT CAN YOU GIVE AWAY, BUT STILL HAVE?

The answer is *Blood*! You can donate a pint to the National Blood Program but still have all your blood . . . because your body makes more to take its place.

As an average healthy person, you have twelve to thirteen pints of blood. Your blood is constantly being replenished. The removal of a pint calls for no special effort on the body's part. The liquid part is replaced almost immediately, the cells and minerals after a few days. Donating a pint of blood is comparable to an afternoon's exercise. A person in good health can do either safely.

So, you can give . . . again and again . . . actually to gain back every drop. When you donate a pint of blood, the only feeling you have is one of satisfaction in helping someone live.

To meet the nation's need for whole blood and derivatives, the National Blood Program must receive the voluntary donation of over 5,000,000 pints this year. To Federal Civil Defense for building reserves of serum albumin, to accident victims in need of whole blood transfusions, to wounded service men in need of shock units of serum albumin, and to children exposed to polio in need of the blood derivative Gamma Globulin, *your blood is vital.*

Your donation means so much and costs you absolutely nothing. Your blood spells life and health to so many without your really losing a thing. Call your local Red Cross, Community or Armed Forces Blood Donor Center today and schedule YOUR donation.

BRUCELLOSIS IN MAN

A Study of Thirty-five Cases Due to Brucella Abortus

WENDELL H. HALL, M.D., Ph.D.
Minneapolis, Minnesota

THE CLINICAL course of human brucellosis has been well defined by Hughes,[12] Eyre[5] and others. With few exceptions, these reports have been based upon studies of patients infected with *Brucella melitensis*. The course of human infections due to *Br. suis* has been clearly described by Jordan and Borts.[13] This paper summarizes our experiences at the Minneapolis Veterans Administration Hospital with thirty-five patients having brucellosis proved by culture to be caused by *Br. abortus*. Epidemiologic, diagnostic and therapeutic observations are emphasized.

Material

The patients were all hospitalized. An unusual opportunity was afforded us to observe the progress of these patients. They have been reexamined in the hospital at intervals of one to six months for as long as six years. They were all males and their ages ranged from twenty-one to fifty-nine years (mean = 35.7 years). These patients came from the upper Midwest, principally from Minnesota and Wisconsin. This region possesses several large meat packing plants, but the area is largely agricultural with emphasis upon dairy cattle. Thirteen patients were farmers who owned cows with contagious abortion or Bang's disease. Fifteen patients were packing plant employes; four worked on beef kill, eight on hog kill and three were not exposed to fresh meat. There was one veterinarian. Six patients had no direct animal contacts, but five of these consumed unpasteurized milk or cheese and one often repaired radios covered with manure.

We were able to examine the families of five of the patients who lived on farms. Only two of the fifteen related people were ill, yet six had Brucella agglutinins in their serum. One fifteen-year-old girl, who had no recognizable illness, was found to have an agglutinin titer of 1:160 and *Br. abortus* was isolated from her blood. Most of these people had little contact with animals but were drinking unpasteurized milk from infected cattle.

Methods of Study

All thirty-five patients were admitted to the hospital and examined carefully by the usual clinical and laboratory methods. None of them had received Brucella vaccine or skin tests prior to examination nor were they used by us.

Brucella Agglutinins.—We have frequently employed Castaneda's rapid slide or "spot" test[3] for the quick detection of patients having brucellosis and have found it useful in the presence of active infection.[7] However, in all instances we have found it advisable to measure the titer of agglutinins by the tube dilution method of Fitch.[6] Incubation was carried out for twenty-four hours at 37° C. The antigen was heat-killed *Br. abortus* supplied by the Bureau of Animal Industry, U. S. Department of Agriculture, Beltsville, Maryland.

The Brucella opsonocytophagic index, precipitin test and complement-fixation tests were not used routinely. The tube-dilution agglutinin test has proved simpler, safe and more reliable. The results of comparative studies with other agglutinin methods have been published elsewhere.[7]

Cultures for Brucella.—At least three blood cultures were obtained from each patient before chemotherapy was started. Cultures of sternal bone marrow were frequently obtained as well as histologic sections of the marrow units in a search for granulomas.[23] The Castaneda[4] double medium culture bottle was used throughout this study. We employed a 100 ml. "French square" bottle closed with a rubber diaphragm stopper and containing 15 ml. of 3 per cent trypticase soy agar* allowed to harden on one side of the bottle. After the agar had solidified, 10 ml. of trypticase soy broth

---

From the Veterans Administration Hospital, Minneapolis, Minnesota and the Department of Medicine, The Medical School, University of Minnesota.

Sponsored by the Veterans Administration and published with the approval of the Chief Medical Director. The statements and conclusions published by the author are the result of his own study and do not necessarily reflect the opinion or policy of the Veterans Administration.

Presented to the First Inter-American Congress of Hygiene, Havana, Cuba, on October 1, 1952, and to the Minnesota Academy of Medicine, on December 10, 1952.

*Obtained from Baltimore Biological Laboratory, Inc., 1640 Gorsuch Avenue, Baltimore 18, Maryland.

containing 2.0 per cent sodium citrate was introduced with sterile precautions. Five ml. of venous blood or other infected material was then introduced aseptically with a needle and syringe. Ten per cent of the atmosphere was replaced with carbon dioxide.** The bottle was incubated in the vertical position at 37° C. The slant was inspected for growth and then the blood-broth mixture was allowed to flow across the slant twice weekly. Unless growth occurred earlier all cultures were incubated thirty days before being discarded.

Identification of the organism was based upon Gram stain, motility test, sugar fermentation, carbon dioxide requirement, urease production, growth on basic fuchsin and thionine dye plates, and agglutination by specific anti-Brucella serum.

Results

The symptoms experienced by these thirty-five patients are listed in Table I. Almost all patients had multiple and varied complaints. The predominant symptoms, such as weakness, sweats and general malaise, were nonspecific. Clear-cut symptoms relating to a specific anatomic system (digestive, respiratory, et cetera), usually were lacking. Symptoms of the disease persisted for an average of 4.6 months in the thirty-one patients where such data were complete. The range was from two weeks to fifteen months.

In spite of multiple symptoms there usually were few physical abnormalities (Table II). Fever was present at some time in all of the thirty-five patients but varied considerably in degree and pattern. In some only a transient, low-grade fever was recorded with a predominantly normal temperature even in the presence of bacteremia. Most patients had chills (Table I) and a diurnal fever to 103° F. or higher for a few days early in the disease but their temperature usually returned to normal in less than two weeks.* A plateau fever was never observed; although the temperature often rose to 104-105° F. in the afternoons, it usually declined in the evening and approached normal by morning. A genuine undulant fever was recorded in only nine of the thirty-five patients. The average duration of fever was 3.2 months (range = ten days to fifteen months) in thirty-two patients.

TABLE I. INCIDENCE OF VARIOUS SYMPTOMS IN CASES STUDIED

	Per Cent
Weakness	94
Sweats	89
Malaise	77
Anorexia	77
Chilliness	74
Headache	74
Backache	63
Chills	63
Pain in Neck	51
Joint Pain	31
Nervousness	31
Insomnia	31
Cough	23
Diarrhea	14
Abdominal Pain	11
Constipation	6
Neuralgia	6
Pleural Pain	3
Dysuria	3
Testicular Pain	3

TABLE II. INCIDENCE OF PHYSICAL SIGNS IN CASES STUDIED

	Per Cent
Fever	100
Lymphadenopathy	68
Weight Loss	51
Splenomegaly	43
Hepatomegaly	34
Abdominal Tenderness	11
Tender Spine	6
Neurologic Changes	6
Rash	3
Orchitis	3
Rales	3
Conjunctivitis	3
Rhinitis	3
Dicrotic Pulse	3

Lymphadenopathy was present in the majority. Usually the anterior and posterior cervical as well as the axillary lymph nodes were enlarged. The nodes were seldom more than moderately enlarged and never showed evidences of suppuration. Occasionally epitrochlear and inguinal lymph nodes were notably swollen. There was palpable enlargement of the liver in one-third and of the spleen in nearly one-half of the patients. However, neither organ was massively enlarged in any patient. Tenderness of the liver was elicited in only four patients, and the spleen was tender in only one-fourth of the patients in whom it was palpable.

External evidence of weight loss was seldom apparent although half the patients lost weight. Only five of thirty-five patients lost 20 pounds or more. The lumbar spine was tender and stiff in two patients having spondylitis and radiculitis. One of these patients also had a positive Babinski reflex and a hemi-hypalgesia to pin-prick. Unusual manifestations included a maculo-papular,

---

**We suspect that it is not necessary to add carbon dioxide for *venous* blood cultures. Venous blood (5 ml.) should contain adequate carbon dioxide. For three years duplicate venous blood cultures, with and without added carbon dioxide, were obtained. Of sixty cultures positive for *Br. abortus,* requiring added carbon dioxide on subculture, thirty-four grew in both Castaneda bottles on primary isolation, fourteen grew only in the presence of added carbon dioxide and twelve grew only in its absence. These results one might expect purely from chance.

*However, thirty-three of the thirty-five patients received some form of chemotherapy.

TABLE III. INCIDENCE OF ABNORMAL LABORATORY FINDINGS IN CASES STUDIED

Abnormality	No. Patients	% Abnormal*	Range of Abnormality
Culture *(Br. abortus)*			
Venous Blood	35	100	
Sternal Marrow	12	83	
Brucella Agglutinins	35	100	Titer 1:160-1:5,120
Hemoglobin	35	0	$<$12.5 Gm.%
Leukocytes	35		
Total		80	3,000-7,999/mm.^{3}
		20	8,000-12,000/mm.^{3}
% Lymphocytes		52	40-70%
		48	20-39%
Erythrocyte Sed. Rate (Westergren)	33		
		79	0-19 mm./1 hr.
		21	20-100 mm./1 hr.
Granuloma			
Sternal Marrow	12	83	
Liver	4	75	

*Where several determinations were made, only the initial value was used in the tabulation.

generalized rash and a tender, enlarged testicle each in a single patient. Thrombophlebitis and pulmonary infarction led to an empyema with a bronchopleural fistula in one patient. This man recovered but required extensive thoracic surgery and had a chronic empyema remaining five years after the onset.

The incidence of the most significant laboratory findings is given in Table III. A positive venous blood culture was obtained in all of the thirty-five patients. The organism was found to have all the typical characteristics of *Br. abortus* in thirty-four patients. In one patient the organism lacked the requirement for carbon dioxide upon primary isolation but had the other characteristic of *Br. abortus.** Culture of sternal bone marrow also yielded *Br. abortus* in ten of twelve patients at a time when they had demonstrable bacteremia. Serial blood cultures were obtained at intervals for as long as six years. Demonstrable bacteremia persisted after the onset of symptoms for an average of 2.8 months (range = two weeks to thirteen months) in thirty-three patients.

Agglutinins for *Br. abortus* were found in the serum of all the patients in a titer of 1:160 or over. The median initial agglutinin titer was 1:640 but the initial titer was only 1:160 in three patients and was 1:5120 in one patient Serial observations of the agglutinin titer were made in all patients. The maximum titer ranged from 1:160 to 1:5120 (Median = 1:1280). The persistence of agglutinins is of considerable interest. In thirty-four patients adequate serologic studies were available following the acute illness. These studies indicated that agglutinins persisted in a titer of 1:160 or greater for over three months in twenty-four patients, over six months in twelve, over twelve months in four and over eighteen months in two. Where agglutinins were followed to near or actual disappearance, a titer of 1:160 or over persisted for an average of 9.1 months in eleven patients (range = two weeks to 4.75 years). In three patients agglutinins persisted in a titer of 1:20 or over for fifteen, fifteen and twenty-four months, respectively, despite complete disappearance of all symptoms, physical signs and bacteremia many months before.

There was no evidence of anemia in any patient. The initial leukocyte count was seldom elevated. It was 10,000 or more per cubic millimeter in only two of thirty-five patients (maximum = 11,500, median = 6,000 and minimum = 2,500). The proportion of lymphocytes to neutrophiles was increased in every patient. The lymphocytes usually were small or medium in size and mature, although occasionally there were many immature leukocytoid lymphocytes in the peripheral blood. The erythrocyte sedimentation rate initially was normal in most patients, but it became markedly elevated in some. Stained sections of aspirated particles of sternal bone marrow showed granulomas resembling non-caseating tubercles in ten of twelve patients. Liver biopsies revealed similar granulomas in three of four patients. Serial liver biopsies also showed hemosiderosis and peri-portal fibrosis in one alcoholic bartender. There was no evidence of in-

---

*This strain grew in an atmosphere from which carbon dioxide was completely absorbed with solid KOH. It produced little H_2S and only moderate amounts of urease. Its growth was prevented by thionin but not by basic fuchsin. It was differentiated from strain 19 *Br. abortus* on methylene blue and thionin blue plates.[15]

TABLE IV. RESULTS OF CHEMOTHERAPY IN CASES STUDIED

Drug	No. of Patients	No. of Therapeutic Courses	Dose per Day	Duration of Therapy	Results (by Therapeutic Courses)		
					Recovered	Relapse	
						Bacteriologic	Clinical
Sulfadiazine	1	3	6 Gm.	14-21 days	1/3	1/3	2/3
Streptomycin	3	3	2 Gm.	4-7 days	2/3	0	1/3
Sulfadiazine and Streptomycin	8	12	5 Gm. 0.5-4 Gm.	7-28 days 7-28 days	6/12	5/12	4/12
Chloramphenicol	5	5	2 Gm.	10 days	2/5	2/5	3/5
Terramycin	2	2	2 Gm.	4-21 days	1/2	0	1/2
Aureomycin	13	16	2 Gm.	7-21 days	9/16	2/16	7/16
Aureomycin and Streptomycin or Dihydrostreptomycin	6	6	2 Gm. 1 Gm.	14-21 days	3/6	2/6	3/6
ACTH	7	7	100 mg.	3-10 days	2/7	3/7	4/7

volvement of the kidneys in any patient although one had definite orchitis.

Results of chemotherapy in thirty-three patients are summarized in Table IV. Two patients received no specific drugs or antibiotics. A rather large number of therapeutic agents was investigated. Although the total number of patients was not large, certain facts soon became evident. Sulfadiazine was bacteriostatic *in vitro* and only moderately suppressive *in vivo*. Streptomycin was strongly bacteriocidal *in vitro* but often failed to be beneficial in human brucellosis.[8] The combination of these drugs was more effective in experimental animal infections and in the human disease than either drug alone.[9,21,22] Toxic effects of streptomycin, such as drug fever, drug rashes and vertigo due to damage to the eighth cranial nerve, were serious disadvantages.

Aureomycin has been thoroughly tested and has proved to be the best therapeutic agent for human brucellosis in our hands.[2,20] It has been effective in suppressing symptoms, fever and bacteremia although some patients required more than one course before they recovered. No serious toxic reactions were observed although gastrointestinal irritation was troublesome in a few. Chloramphenicol and terramycin were used in a few patients. Chloramphenicol seemed slightly less effective than aureomycin but also produced fewer digestive disturbances. No hematologic toxicity was observed. Too few patients were given terramycin to permit valid comparisons. A combination of aureomycin plus streptomycin (or dihydrostreptomycin) was also studied in several patients after the method of Herrell and Barber.[10] The results were no better than those obtained with aureomycin alone. Fortunately no serious toxic effects were observed, probably because of our conservative daily dose of streptomycin.

Recently seven patients have been treated with corticotropin (ACTH) given alone or just prior to a course of antibiotics. The results have been reported in detail elsewhere.[1,19] Briefly, there was almost complete subsidence of symptoms and fever in spite of continued bacteremia as long as ACTH was given. Fever usually recurred as soon as the hormone was discontinued. No untoward effects were observed. Two recoveries were observed after ACTH alone; these may have been spontaneous.

Discussion

The diagnosis of human brucellosis is often difficult. The disease is most common in young men because of greater occupational exposure. It should be suspected in any febrile illness occurring in a packing plant employe, farmer or veterinarian. When a farmer is infected, it is worth while to examine all other members of the household since many unsuspected infections may be uncovered. *Br. abortus* may infect packing plant workers exposed to fresh pork as well as those coming into contact with beef only.[14] Although they form only a small fraction of the total number of sick patients, the individuals whose infection can be traced only to ingestion of unpasteurized milk or dairy products serve to emphasize the necessity for pasteurization of such foods.

As shown in Table I the symptoms are seldom diagnostic. Taken together with the occupational history, however, they may suggest the proper diagnosis to the experienced physician. The paucity of physical abnormalities (Table II) is striking; bedside examination of the patient alone never permits an unqualified diagnosis. The idea that an undulating, recurrent fever is the rule is not true; such a febrile course was present in only one-fourth of our patients. Some of the patients were afebrile for most of the duration of their disease. Only occasional patients had high fever and a severe illness. Complications such as orchitis, rashes and severe hepatitis were uncommon. The most frequent complication was spondylitis.

Skin tests with Brucella antigens have value in diagnosis in a febrile patient only if negative. A positive skin test does not indicate that an infection is necessarily active. The more widespread the disease, the less the value of skin tests. We do not believe they should be used except for epidemiologic studies because they often incite a confusing antibody response.

The most useful diagnostic tool has been the agglutination test. The tube dilution method has proved to be the most accurate available.[7] The initial agglutinin titer of all the patients in this series was 1:160 or over (Table III). However, the long persistence of agglutinins (average = 9.1 months) at this level, in the absence of symptoms or other evidence of activity, casts some doubt on the value of Brucella agglutinins in this titer as a measure of activity. The cause for agglutinins persisting for many months remains unknown but chronic intracellular parasitism in lymph nodes, spleen and liver seems the most likely explanation.

The only absolute proof of diagnosis is the isolation of Brucella from the patient. For this purpose we prefer venous blood cultures using the Castaneda double medium bottle.[4] Preferably three or more cultures should be obtained. Since the concentration of *Br. abortus* is low in the blood, if only a small amount of blood is submitted for culture, the organism may not grow. There does not seem to be any great advantage in using sternal bone marrow for cultures; in this series none was positive except in patients with demonstrable bacteremia. Bacteremia usually continues for less than three months with *Br. abortus* infections in human beings, although positive blood cultures were obtained in one patient thirteen months after the onset of his infection. Presumably the infrequent occurrence of chronic bacteremia is due to the infrequent occurrence of suppurative lesions. Histologic studies of biopsies of sternal bone marrow, lymph nodes and liver confirmed previous reports that the inflammatory changes consist of non-caseating granulomas made up to epitheliod cells and occasional Langhans giant cells.[11,23] In some patients liver biopsies showed considerable collections of mononuclear leukocytes in peri-portal areas adjacent to more or less well-defined granulomas. In one alcoholic patient serial liver biopsies showed considerable deposits of hemosiderin in bands of peri-portal connective tissue; there was no other evidence of hemochromatosis or cirrhosis of the liver.

Hematologic studies were helpful diagnostically. Leukocytosis was seldom seen even in the presence of complications. The prevailing pattern in the peripheral blood was a low or normal total leukocyte count with a relative increase in mature lymphocytes. Occasionally the appearance of numerous circulating leukocytoid lymphocytes together with fever, lymphadenopathy and splenomegaly caused some difficulty in differentiation from infectious mononucleosis.[18] However, heterophile antibody usually was present only in low titer and was readily absorbed with guinea pig kidney. The erythrocyte sedimentation rate was normal more often than is the case in most bacterial infections but it was not a reliable diagnostic aid.

The therapy of human brucellosis has undergone a gradual evolution in the past ten years. At first no treatment was offered. Early in the past decade sulfonamides were used but proved disappointing. Streptomycin, which seemed so strikingly effective in the test tube, also proved to be of little value in patients. The combination of these drugs improved therapeutic results but at the expense of serious toxicity caused by the streptomycin. Chloramphenicol has been abandoned because the results obtained did not seem to justify the risk of serious bone marrow depression.[24] In our hands aureomycin has proved the best of the antibiotics. However, there has been a disturbing number of relapses and these have not been prevented by the addition of streptomycin or dihydrostreptomycin. These antibiotics suppress the infection, fever and bacteremia but these effects are often only temporary and the ultimate recovery of the patient seems to depend upon his inherent powers of resistance. Antibiotics probably fail to be curative because they fail to penetrate infected intra- and extra-cellular foci.[16,17] Fever and toxicity can be controlled quickly with ACTH in spite of continued bacteremia. Thus ACTH may prove to be beneficial, when combined with antibiotics, for the treatment of the most severely toxic patients.

Since human brucellosis can nearly always be traced to an animal source, control of the human disease depends primarily on extermination of the animal reservoir. Pasteurization of milk and other dairy products is helpful but will not eliminate human brucellosis. Control of the disease in cattle, goats, sheep and hogs is a problem for veterinarians and public health officers, but the physician should be and is vitally interested. Whether vaccination, slaughter or quarantine of infected animals is the best policy may well depend upon local economic factors as well as the biology of the disease. Vaccination of human beings does not appear to be effective.

Summary and Conclusions

1. Thirty-five patients with brucellosis caused by *Br. abortus* were studied. Symptoms of the disease were multiple and varied. Physical findings usually were few and inconclusive.

2. *Br. abortus* was isolated from the blood of every patient. All had serum agglutinins ranging in titer from 1:160 to 1:5120. The diagnosis rested principally upon the epidemiologic and clinical history, the agglutination test and the blood culture. Only the last was decisive.

3. Aureomycin proved to be the most satisfactory therapeutic agent. There seemed to be no advantage in adding streptomycin or dihydrostreptomycin. Corticotropin (ACTH) controlled fever and toxicity but not bacteremia. Corticotropin may be a useful adjunct to chemotherapy in critically ill patients.

4. Control of human brucellosis rests upon pasteurization of dairy products and elimination of the animal reservoir.

References

1. Abernathy, R.; Spink, W. W.; and Hall, W. H.: Cortisone and adrenocorticotropic hormone (ACTH) in experimental and human brucellosis. Bull. U. Minn. Hosp., 23:259-288 (Feb. 1) 1952.
2. Braude, A. I.; Hall, W. H.; and Spink, W. W.: Aureomycin therapy in human brucellosis due to Brucella abortus. J.A.M.A., 141:831-835 (Nov. 19) 1949.
3. Castaneda, M. R.: Brucellosis. Monograph series of Revista Medicina, Mexico, 1942.
4. Castaneda, M. R.: A practical method for routine blood cultures in brucellosis. Proc. Soc. Exp. Biol. & Med., 64:114-115. (Jan.) 1947.
5. Eyre, J. W. H.: The Milroy lectures on melitensis septicemia (Malta or Mediterranean fever). Lecture I. Lancet, 174:1677-1682 (June 6) 1908.
6. Fitch, C. P.; Donham, C. R.; Bishop, L. M., and Boyd, W. L.: Studies of the test tube agglutination test for the diagnosis of Bang's disease (contagious abortion). U. Minn. Agric. Exp. Stat. Tech. Bull., 73:1-56 (Nov.) 1930.
7. Hall, W. H., and Manion, R. E.: Comparison of the Coombs test with other methods for Brucella agglutinins in human serum. J. Clin. Invest., 32:96-106 (Jan.) 1953.
8. Hall, W. H., and Spink, W. W.: *In vitro* sensitivity of Brucella to streptomycin: development of resistance during streptomycin treatment. Proc. Soc. Exp. Biol. & Med., 64:403-406, 1947.
9. Hall, W. H., and Spink, W. W.: Therapy of experimental Brucella infection in the developing chick embryo. I. Infection and therapy via the allantoic sac. J. Immunol., 59 (No. 4): 379-391 (Aug.) 1948.
10. Herrell, W. H., and Barber, T. E.: The combined use of aureomycin and dihydrostreptomycin in the treatment of brucellosis. Proc. Staff Meet., Mayo Clin., 24:138, 1949.
11. Hoffbauer, F. W.; Spink, W. W.; Walker, W. W., and Green, R. A.: Histopathology of the liver in human brucellosis. J. Lab. & Clin. Med., 34:40-58 (Jan.) 1949.
12. Hughes, L.: Mediterranean, Malta or undulant fever. London: Macmillan & Co., 1897.
13. Jordan, C. F., and Borts, I. H.: Brucellosis and infection caused by three species of brucella. Am. J. Med., 2:156-167 (Feb.) 1947.
14. McCullough, N. B.; Eisele, C. W., and Pavelchek, E.: Survey of brucellosis in slaughtered hogs. Pub. Health Rep., 66:205-208 (Feb. 16) 1951.
15. McLeod, D. H.: The use of thionin blue for identification of Br. abortus "19." J. Comp. Path. & Therap., 54:248-252, 1944.
16. Magoffin, R. L., and Spink, W. W.: The protection of intracellular brucella against streptomycin alone and in combination with other antibiotics. J. Lab. & Clin. Med., 37:924, 1951.
17. Shaffer, J. M., and Kucera, C. J.: Studies on the biologic significance of the protection afforded intracellular brucella. Abstract. J. Clin. Invest., 31:661 (June) 1952.
18. Spink, W. W., and Anderson, D.: Studies relating to the differential diagnosis of brucellosis and infectious mononucleosis. Clinical, hematologic and serologic observations. Tr. A. Am. Physicians, 64:428, 1951.
19. Spink, W. W., and Hall, W. H.: The influence of cortisone and adrenocorticotropic hormone on brucellosis. II. Adrenocorticotropic hormone (ACTH) in acute and chronic human brucellosis. J. Clin. Invest., 31:958 (Nov.) 1952.
20. Spink, W. W.; Hall, W. H., and Magoffin, R.: Follow-up study of therapy in forty-eight culturally proved cases of brucellosis. Arch. Int. Med., 88:419-432 (Oct.) 1951.
21. Spink, W. W.; Hall, W. H.; Shaffer, J. M.; and Braude, A. I.: Human brucellosis: Its specific treatment with a combination of streptomycin and sulfadiazine. J.A.M.A., 136:382-387 (Feb.) 1948.
22. Spink, W. W.; Hall W. H.; Shaffer, J. M.; and Braude, A. I: Treatment of brucellosis with streptomycin and a sulfonamide drug. J.A.M.A., 139: 352-356, 1949.
23. Sundberg, R. D., and Spink, W. W.: The histopathology of lesions in the bone marrow of patients having brucellosis. Blood, Supp. No. 1, 7-32, 1947.
24. Volini, I. F., and others: Hemopoietic changes during administration of chloramphenicol (chloromycetin). J.A.M.A., 142:1333 (April 29) 1950.

ANTIBIOTIC THERAPY IN BACTERIAL ENDOCARDITIS

III. Penicillin O and Hypoallergenic Penicillins in Treatment of Subacute Bacterial Endocarditis

JOSEPH E. GERACI, M.D., and PHIL R. MANNING, M.D.
Rochester, Minnesota

THE TREATMENT of subacute bacterial endocarditis occasionally is complicated by reactions caused by sensitivity to penicillin. In 1943, Lyons reported that reactions to penicillin in the form of urticaria occurred in 5.7 per cent of 209 patients. Simon[15] stated that the incidence of all types of reactions to penicillin was approximately 7 per cent.

Evidence indicates that the incidence of sensitivity to penicillin is greater when large amounts of penicillin are used for long periods than when smaller amounts are used for shorter periods.[6] In the treatment of subacute bacterial endocarditis, which requires administration of large amounts of penicillin for a relatively prolonged period, the problem of sensitivity to penicillin is apt to be more common than in treatment of other conditions. The problem is particularly serious in this disease, because without proper treatment, subacute bacterial endocarditis is a fatal disease.

The commonest type of reaction of sensitivity to penicillin is urticaria, which usually occurs from seven to fourteen days after administration of penicillin. Urticaria may occur much more rapidly in patients who have previously received penicillin. The urticarial reaction is usually temporary and does not necessarily recur if penicillin is given subsequently.

Penicillin also may cause an erythemato-vesicular eruption. This lesion most commonly occurs on the hands, feet and groin.[10] Vesicular lesions may occur spontaneously in patients who have not received penicillin previously. It is considered that such patients have been sensitized by fungous infections of the skin.[4,8] The erythemato-vesicular lesions should be regarded with caution because of the danger of subsequent exfoliative dermatitis.

The treatment of reactions induced by sensitivity to penicillin is difficult to evaluate because of the frequently temporary nature of the condition, especially the urticarial lesions. It is often found that cutaneous lesions disappear even when use of penicillin is continued and that subsequent administration of penicillin to persons who have a history of sensitivity to penicillin may not cause any adverse reaction.

However, such reactions of sensitivity are persistent in some patients and may be refractory to one or more types of treatment. Nevertheless, when a potentially fatal disease such as subacute bacterial endocarditis is encountered, it may become almost obligatory to give penicillin. Various measures may be needed to combat these reactions of allergy. Unfortunately, no method is available to judge which method of treatment will be most successful in a given patient, so it is often necessary to be guided by the patient's history and to employ the several available methods of treatment by trial and error.

Simon[13,14] reported excellent results in decreasing the incidence of such reactions to penicillin by use of preparations containing a mixture of penicillin and an antihistaminic. Injection of these preparations is said to be well tolerated. Administration of solutions of penicillin containing 0.5 per cent of 2-[α (2-dimethylaminoethoxy) - α - methylbenzyl]-pyridine (decapryn) reduced reactions of sensitivity to penicillin from 6.5 to 2.4 per cent. When a 1 per cent solution of 2-[(2-dimethylaminoethyl) - 2 - thenylamino] - pyridine (histadyl) was added to penicillin, the rate of reactions was decreased to 0.5 per cent in a large series of cases, according to Simon. We have had no personal experience with these preparations.

Peck and his co-workers[9] have shown that hyposensitization attained by administration of small amounts of penicillin, with gradual increase of the dose, may be successful in the elimination of reactions to penicillin. This procedure is time-consuming and may not always be effective; however, we have used it with success in several cases of endocarditis.

Recently, interest has turned to various "hypoallergic" preparations of penicillin, such as penicillin O (allylmercapto-methylpenicillin). Reports

---

Dr. Manning is a Fellow in Medicine, Mayo Foundation, and Dr. Geraci is with the Division of Medicine, Mayo Clinic, Rochester, Minnesota.

concerning the effectiveness of these penicillins are conflicting. Siegal concluded that cross-sensitivity between penicillins O and G is the rule rather than the exception in patients who display persistent reactions. Volini and associates, however, used penicillin O in fifty-seven patients who had clinical symptoms of hypersensitivity to penicillin G; none of these patients showed untoward reactions to penicillin O. Adair and his co-workers stated that, "When therapy cannot be discontinued in the patient with a serious infection because of a hypersensitivity reaction, substitution of penicillin O for G can be considered a safe and beneficial procedure."

We are reporting the cases of three patients who had subacute bacterial endocarditis, who gave a history of sensitivity to penicillin G and who were treated satisfactorily with penicillin O. It will be noted that all three patients did manifest some reaction to penicillin O; however, it was considered that these reactions were much less severe than would have been expected with penicillin G on the basis of the patients' histories of previous reactions. Treatment in each of these patients was able to be continued to a successful conclusion.

Report of Cases

Case 1.—A forty-one-year-old white woman was admitted to the Mayo Clinic with a four months' history of daily fever as high as 102.4° F. (39.1° C.), night sweats, increasing fatigue, anemia and occasional chills. No previous history was present of rheumatic fever, rheumatic heart disease or a cardiac murmur. The onset of the disease had been gradual.

General examination revealed sinus tachycardia, minimal aortic insufficiency with a diastolic murmur at the aortic zone and a minimal apical systolic murmur. Cardiac size and rhythm were normal. Slight clubbing of the fingers was present and the splenic edge was just palpable.

Pertinent laboratory findings revealed mild anemia, an elevated erythrocytic sedimentation rate and microhematuria. Smear of the blood showed a few phagocytic reticuloendothelial cells and some toxic polymorphonuclear leukocytes. The leukocyte count was within normal limits. Two cultures of blood revealed the presence of Streptococcus mitis; this organism was inhibited by less than 0.05 unit of penicillin and by 1.5 micrograms of aureomycin per cubic centimeter of medium.

Because of a history of previous severe allergic sensitivity to penicillin G, the patient was given penicillin O and dihydrostreptomycin in combination. She received 300,000 units of penicillin O every three hours intramuscularly. Dihydrostreptomycin was given in doses of 0.5 gm. every six hours for a daily total of 2 gm. Tripelennamine hydrochloride (pyribenzamine) was given every six hours in doses of 50 mg. On the third day of treatment a mild pruritic maculopapular cutaneous eruption was noted on the neck and arms. This began to clear up by the end of the next day. At this time the injections of penicillin, which had been given only at one site, were given in various extremities and at different locations. The next day great intensification of the pruritus and the maculopapular erythematous eruption occurred, together with the appearance of a rash over the buttocks, the posterior aspect of the thighs and, to a lesser extent, on the calves, forearms, face and neck. Administration of pyribenzamine was increased to every four hours and calamine lotion was used for the pruritus.

Administration of the antibiotics was continued despite the extensive cutaneous disturbance and finally the eruption began to subside. At the end of the fourteenth day of treatment the rash had cleared almost completely except for the tips of the third and fourth left fingers and one of the fingers of the right hand. These regions revealed whitish zones of dead skin. These zones became more numerous and coalesced, so that exfoliation of the skin of the hands eventually occurred. The patient responded well to this short term of combined therapy with penicillin and streptomycin. Follow-up studies twelve months later revealed that she continued to be well. No cutaneous tests for sensitivity to penicillins O or G were performed and no penicillin G was given either during or after treatment with penicillin O.

Case 2.—A seventy-four-year-old white man was admitted to the clinic with a five months' history of anorexia, easy fatigability, loss of strength and weight, mild arthralgias and low-grade fever, which on occasion was as much as 103° F. (39.5° C.). Six months before the onset of these symptoms the patient had undergone transurethral prostatic resection. A diagnosis of subacute bacterial endocarditis had been made at home. The organisms that had been isolated were thought to be nonhemolytic streptococci, which were found to be resistant to all the more commonly used antibiotics except chloramphenicol (chloromycetin). He had been treated with 3 gm. of chloromycetin per day for four weeks without success. Use of penicillin had been followed by extensive reactions resembling exfoliative dermatitis over several parts of the body. The patient had been advised never to have penicillin again.

General examination showed questionable petechiae on the buccal mucosa. The blood pressure was within normal limits, as was the cardiac rate; cardiac rhythm was normal. The heart was not enlarged. A loud systolic murmur was heard at the aortic and mitral zones and was loudest at the apex. The prostate was enlarged. No clubbing of the fingers or splenomegaly was noted. The patient did not look ill.

Results of laboratory examination disclosed mild anemia, elevated erythrocytic sedimentation rate and microhematuria. The total leukocyte count and a differential count were normal. No phagocytic reticuloendothelial cells were noted in smears of blood. Values for blood urea were within normal limits; a roentgenogram of the thorax revealed nothing abnormal. Three cultures of the blood disclosed micrococci, the species of which was undetermined. Studies of sensitivity revealed that this organism was inhibited by 1.6 units of penicillin per cubic centimeter of medium. It was not inhibited by more than 50 micrograms of aureomycin, terramycin or chloromycetin, or by more than 100 micrograms of dihydrostreptomycin per cubic centimeter.

Because of the great resistance of the organism to most antibiotics and its relative sensitivity to penicillin, and because of the history of prior hypersensitivity to penicillin G, it was decided to treat the patient with penicillin O. A total of 900,000 units of penicillin O in divided doses was given on the first day. This amount was increased to 2,000,000 units the next day; daily treatment with this amount was continued. On the third day of treatment, mild erythema and edema associated with slight pruritus appeared in the inguinal regions and the upper parts of the thighs. These conditions subsided in two days even though treatment was continued, but some scaling of the superficial layers of the skin occurred during the next few days in these regions. After seven days the daily dose was increased to 4,000,000 units and was continued at this level for sixteen days. On the fifteenth day of treatment, intramuscular administration of procaine penicillin G was begun in small doses; the daily dose was gradually increased until 5,000,000 units of this form of penicillin was given per day. Then penicillin G was given by continuous intravenous drip, at first in small doses and then in increasingly larger amounts until a total dose of 10,000,000 units per day was being given in this manner. This amount was administered daily during the last nine days of treatment. Dihydrostreptomycin in amounts of 2 gm. per day for the first two weeks in divided doses and 1 gm. per day for the remainder of the period of treatment was also used. In addition, the patient received 50 mg. of pyribenzamine every six hours during the first two weeks of treatment. Administration of probenecid (benemid) in doses of 0.5 gm. four times a day was instituted in an attempt to enhance the concentration of penicillin in the blood.

The duration of treatment was thirty-six days, during which a total of 183,500,000 units of penicillin and 49 gm. of dihydrostreptomycin was used. The patient responded well to this program except for a mild psychosis induced by fatigue and exhaustion for several days; this disappeared before treatment was terminated. Follow-up studies in this case after an interval of some months indicated that the patient was well and working.

Case 3.—A fifty-eight-year-old Negro was admitted to the clinic with a six months' history of malaise, easy fatigability, recurrent arthralgia involving the shoulders, sweats, chills, fever and loss of weight. During the three months prior to admission he had experienced a chill almost daily, together with a fever as high as 104° F. (40° C.) and diffuse sweating.

General examination disclosed evidence of recent loss of weight. The heart did not appear enlarged. A minimal systolic murmur was present at the cardiac apex; sinus tachycardia was noted and the blood pressure was 120 mm. of mercury systolic and 75 disastolic. No clubbing of digits or splenomegaly was present.

Results of laboratory examination disclosed severe anemia, the value for hemoglobin being 6.8 gm. per 100 cc. of blood; the leukocyte count was normal and a differential count disclosed 87 per cent polymorphonuclear leukocytes. The erythrocytic sedimentation rate was 98 mm. at the end of the first hour (Westergren method). The value for blood urea was increased. Urinalysis showed albuminuria, michropyuria and hematuria. Two cultures of the blood disclosed the presence of Streptococcus mitis. Results of tests for sensitivity revealed that the organism was inhibited by 0.1 unit of penicillin, by 1.5 micrograms of terramycin and by 3.1 micrograms of aureomycin per cubic centimeter of medium.

Because of a history of previous reactions to penicillin G and because of the unavailability of penicillin O at the time, administration was begun of 3 gm. of terramycin and 1 gm. of dihydrostreptomycin per day in divided doses. Additional studies *in vitro* after treatment was started disclosed that terramycin alone had only slight bactericidal action and that the organism was not inhibited by more than 100 micrograms of streptomycin. A combination of terramycin and dihydrostreptomycin did not show enhanced bactericidal activity. Penicillin and terramycin together did not show increased effectiveness; indeed, this combination showed less bactericidal effect than did penicillin alone. Penicillin and streptomycin on the other hand did exhibit greater killing power than did penicillin alone. Despite this additional information it appeared advisable to continue use of the combination of terramycin and dihydrostreptomycin and to avoid use of penicillin G.

Treatment was continued for fourteen days and then stopped. The patient's temperature, which had been 103° F. (39.5° C.) before treatment was started, decreased to normal two days after onset of treatment. Cultures of blood failed to reveal any organisms and the patient was considerably improved symptomatically. Two weeks after treatment was discontinued the temperature increased and chills reappeared; cultures of blood made at this time again disclosed streptococci. Studies of sensitivity at this time revealed that the organism was inhibited by more than 6.2 micrograms of terramycin, 0.8 unit of penicillin, 6.2 micrograms of aureomycin and 25 micrograms of streptomycin per cubic centimeter of medium. The patient was then given from 600,000 to 3,000,000 units of penicillin O per day; it was given intramuscularly every three hours in divided doses. After the first dose of penicillin O, urticaria developed in the left lower eyelid and at the base of the left side of the neck. Diphenhydramine hydrochloride (benadryl), in a dose of 100 mg., was given; use of penicillin O was continued. After the fourth injection of penicillin O, the onset of mild redness, swelling and tenderness was noted in the terminal portions of all the fingers of both hands. These reactions had occurred after previous use of penicillin G and had been so alarming that the family physician had warned against further administration of penicillin. By the next morning the cutaneous lesions had disappeared and use of penicillin O was continued in larger daily doses without further reactions.

Dihydrostreptomycin was given as before. This schedule of treatment was continued for eleven days. Then procaine penicillin G in daily amounts of 3,600,000 to 4,800,000 units was administered along with dihydrostreptomycin. Finally, penicillin G was given by continuous intravenous drip, the daily dose averaging about 10,000,000 units; use of dihydrostreptomycin was continued. The patient received a total of 650,000,000 units of penicillin, 83 gm. of dihydrostreptomycin and 27 gm. of terramycin. Numerous cultures of blood obtained during the period of treatment failed to reveal organisms. Subsequent follow-up information revealed that the patient was well one year later.

Comment

Because reactions of sensitivity to penicillin are frequently temporary and fluctuate greatly, it is not possible to state dogmatically that these patients could not have been treated initially with penicillin G. However, because of the history of previous severe reactions to penicillin G, it was considered unwise to give this preparation at the onset of treatment. The considerably milder nature of the reactions with penicillin O indicates that the latter form of penicillin was of benefit in the treatment of these patients.

One can only speculate concerning the type and severity of the cutaneous reactions that might have developed in these three patients had they been given penicillin G initially. In the first case, the extensive erythematous maculopapular rash had begun to clear by the end of the fourteenth day of combined therapy with penicillin O and dihydrostreptomycin, but exfoliation of the skin of the fingers and hands was beginning to develop. Appearance of this reaction sooner or a longer period of treatment would have necessitated cessation of treatment with penicillin in this patient. It was considered that successful short-term treatment with penicillin O in combination with dihydrostreptomycin[3] enabled us to eradicate the infection; this might not have been achieved if it had been necessary to use either penicillin G or penicillin O alone or in combination with streptomycin for the conventional period of treatment of four to six weeks. In the second case, the exfoliative reaction that occurred with penicillin O was considerably milder than that after previous use of penicillin G and it cleared up in several days while treatment with penicillin O was continued. In this case also, it was considered that successful therapy was possible because of the use of penicillin O, particularly in view of the fact that the organism was extremely resistant to all the other more commonly used antibiotics. In the third case, the reaction to penicillin O was considerably less severe and more transient than that seen after use of penicillin G. After failure of combined treatment with terramycin and dihydrostreptomycin, it was still considered hazardous to start with penicillin G; therefore penicillin O was substituted with good results.

It is evident that cross-sensitivity was present between penicillins O and G in all three cases; however, penicillin O apparently caused relatively mild and transient reactions. While it is evident that penicillin O is not the final answer to the problem of sensitivity to penicillin, it offers one more approach to the treatment of patients who have subacute bacterial endocarditis, who are sensitive to penicillin G and in whom use of penicillin is indicated.

In the treatment of a potentially fatal disease, such as subacute bacterial endocarditis, it is valuable to have available several methods of treatment to combat sensitivity to penicillin. Given a patient in whom a diagnosis of endocarditis is established and who presents a history of sensitivity to penicillin, the physician may approach the problem of therapy with the following thoughts:

1. If the history is that of a mild urticarial or erythemato-vesicular eruption, one may begin with conventional treatment and give antihistaminics when the reaction of sensitivity manifests itself. As was done in the three cases we have reported, administration of antihistaminics may be started at the onset of therapy.

2. If a history of moderately severe cutaneous reactions is present, one may begin treatment with a combination of antihistaminic and penicillin in solution given by the continuous intravenous route, as suggested by Simon.

3. Penicillin O may be used, with or without addition of an antihistaminic.

4. If these forms of treatment are of no avail, then one can test the sensitivity of the isolated organisms to the other commonly used antibiotics and to combinations of antibiotics, in a search for synergistic bactericidal effects. In the rare case in which penicillin cannot be used, it may be possible to eradicate the infection by use of another antibiotic or combination of antibiotics that has been demonstrated to be of value by studies *in vitro*. Occasionally it is possible to use successfully one of the bacteriostatic agents, such as terramycin or aureomycin, either alone or in combination with dihydrostreptomycin or other anti-

biotics.[5,11] However, experience has indicated that use of such bacteriostatic agents, either alone or in combination, is of limited value in the treatment of bacterial endocarditis.[2]

5. If all these methods have failed, one must resort to the costly and time-consuming method of hyposensitization to penicillin. This phase of the problem has been thoroughly reviewed by Siegal.

Summary

Three patients who had subacute bacterial endocarditis and who presented histories of previous severe reactions of sensitivity to penicillin G were successfully treated with penicillin O. All three patients manifested mild reactions of sensitivity to penicillin O; these reactions were insufficient in degree to warrant cessation of administration of this form of penicillin.

Penicillin G was administered subsequently in gradually increasing doses in two of these three cases without any untoward reactions. Antihistaminic drugs were used in all three cases in an attempt to minimize the extent of reactions.

References

1. Adair, C. V., Woodin, W. G., and Bunn, P. A.: Clinical and pharmacologic studies with allylmercaptomethyl penicillin: (Penicillin "O"). Am. J. Med., 11:188-195 (Aug.) 1951.
2. Geraci, J. E.: Antibiotic therapy of bacterial endocarditis. I. Experiences with terramycin in the treatment of subacute bacterial endocarditis. Proc. Staff Meet., Mayo Clin., 27:169-180 (Apr. 23) 1952.
3. Geraci, J. E., and Martin, W. J.: Antibiotic therapy of bacterial endocarditis. IV. Successful short-term (two weeks) combined penicillin-dihydrostreptomycin therapy in subacute bacterial endocarditis caused by penicillin-sensitive streptococci circulation. (In press.)
4. Graves, W. N., Carpenter, C. C., and Unangst, R. W.: Recurrent vesicular eruptions appearing during administration of penicillin. Arch. Dermat. & Syph., 50:6-7 (July) 1944.
5. Jawetz, E., Gunnison, J. B., and Speck, R. S.: Antibiotic synergism and antagonism. New England J. Med., 245:966-968 (Dec. 20) 1951.
6. Lepper, M. H., Dowling, H. F., Robinson, J. A., Stone, T. E., Brickhouse, R. L., Caldwell, E. R., Jr., and Whelton, R. L.: Studies on hypersensitivity to penicillin: I. Incidence of reactions in 1,303 patients. J. Clin. Investigation, 28:826-831 (Sept.) 1949.
7. Lyons, Champ: Penicillin therapy of surgical infections in the U. S. army. J.A.M.A., 123:1007-1018 (Dec. 18) 1943.
8. Peck, S. M, and Hewitt, W. L.: The production of an antibiotic substance similar to penicillin by pathogenic fungi (Dermatophytes). Pub. Health Rep., 60:148-153 (Feb. 9) 1945.
9. Peck, S. M., Siegal, Sheppard, and Bergamini, Rose: Successful desensitization in penicillin sensitivity. J.A.M.A., 134:1546-1547 (Aug. 30) 1947.
10. Peck, S. M., Siegal, Sheppard, Glick, A. W., and Kurtin, Abner: Clinical problems in penicillin sensitivity. J.A.M.A., 138:631-638 (Oct. 30) 1948.
11. Rubenstein, Edward, and Austin, P. G. M.: The combined use of aureomycin and terramycin in the treatment of subacute enterococcal endocarditis. Am. Heart J., 43:922-926 (June) 1952.
12. Siegal, Sheppard: Allergy to penicillin O and the management of penicillin sensitivity. Am. J. Med., 11:196-201 (Aug.) 1951.
13. Simon, S. W.: Hypoallergic penicillin. Ann. Allergy, 8:194-201 (Mar.-Apr.) 1950.
14. Simon, S. W.: Hypoallergic penicillin: III. Histadyl-penicillin. Ann. Allergy, 9:665-668 (Sept.-Oct.) 1951.
15. Simon, S. W.: Hypoallergic penicillin. IV. Chlor-trimeton-penicillin. Ann. Allergy, 10:187-191 (Mar.-Apr.) 1952.
16. Volini, I. F., Shlaes, W. H., and Felsenfeld, Oscar: Use of penicillin O in patients hypersensitive to penicillin G. J.A.M.A., 143:794-797 (July 1) 1950.

CAR DEATHS COST LIFE INSURERS $69 MILLION

Automobile fatalities brought 39,000 life insurance death claims in 1952, representing aggregate payments of $69,000,000 in the year, the Institute of Life Insurance reports.

The life payments stemming from motor vehicle deaths in 1952 were very nearly as great as all life insurance death benefit payments annually for all causes of death in the late '90s, the Institute said.

"While the dollar cost is purely incidental to the personal tragedies involved, it does stand as a warning of a huge public loss, even when insurance payments are made," the Institute commented.

Life insurance purchases in the United States in 1952 set an all-time record, it was reported by the Life Insurance Agency Management Association.

Life insurance purchases in the United States in January were 16 per cent greater than the volume in the corresponding month of last year, and were at a record level for January.

A LOOK BACKWARD

OWEN H. WANGENSTEEN, M.D.

Professor of Surgery, University of Minnesota Medical School
Minneapolis, Minnesota

MY FRIENDS in the Academy:

There are ordinarily two happy moments surrounding election to High Office. First, as one contemplates with pride the esteem of his colleagues which placed him there, and then when he is relieved of the responsibilities of the office. You have shown me previously many evidences of your affection, a sentiment which I reciprocate and for which I am very grateful. You have placed me greatly in your debt. And now that I am about to join that group of distinguished past presidents of this Academy, I want to acknowledge with a sense of pride this additional mark of your confidence. Life often rewards us many times beyond our true merit. As I stand before you now with "emotional knees," I have only one claim upon you—and that is one of profound gratitude for your kindly acceptance of me.

Much of what happens to us in life is accident: Who our parents are; where we grow up; who our associates are; who our teachers are; under what influences or spells we come, and a host of other considerations which determine in an important manner the fate of any one of us.

My appearance before you tonight is in the real sense an accident. I never wanted to be a doctor. The reasons, whatever they were, seemed very real to me then. My father was a small town business man in a village in Western Minnesota in the Red River Valley, and we lived on a farm on the edge of the village. My only ambition was to be a farmer. Living close to nature, surrounded by a host of living and growing plants and creatures filled me with a sense of the joy of living, of being useful and of being a part of an important scene. It is still a pleasant dream! However, my father had other plans for me. He was intrigued by my anxiety over sick animals, horses, cows, and pigs alike. My only concern was for them.

A number of years ago—in 1926, I believe it was—Ray LaVake asked a number of us to tell at a Nu Sigma Nu banquet what the resolution of forces was which led us to become doctors. To a few of you, therefore, my story is repetitious. But I repeat it here only to ~~emphasize the point~~ that what we are and do is often in large measure mere accident. One spring, while I was still a student in High School, we had on the farm about fifty sows that could not farrow their young. The first two sows with their unborn litters we lost while waiting, on the advice of our veterinarian, "for nature to take its course." I scurried through the *Breeders' Gazette, The Farmer,* and several books on the veterinary problems of the farmer which occupied a row on our modest book shelves. A snaring apparatus procured through the advertising columns of one of these journals proved useless. Much to my amazement, I found my own hand the best instrument to deliver these pigs. The effort cost me about three weeks of school, for as those of you who have had obstetrical experience know, these obstetrical assignments are time consuming, especially for multiple births. For me it was a task that had to be done. I can still feel, after these many years, the warmth of my father's sense of pride in the accomplishment. Three years in college went by before I capitulated to my father's plea to have a go at medicine. That last summer on the farm, during World War I, when help was very scarce, it fell to my lot to haul manure every day during a hot spell of weather for a period of about three weeks between haying and harvesting. Well, it was too much. Anything, I thought, would be better than this! So through the portals of pigs and manure, I come before you tonight.

And what a thrilling experience it has been to be a doctor! You, who have thoroughly enjoyed the experience such as I have, know whereof I speak. I retell this story for another reason—to emphasize the great influence which the ferments of time and experience work silently upon our minds and outlook. That which we reject in adolescence, we come with more experience not only to accept, but to embrace. Our language stands in need of a good word to connote this transition from rejection to acceptance. How the interaction of a number of forces can be influenced favorably to bring such conversions about is probably one

---

Presidential Address, presented at the Minnesota Academy of Medicine, January 14, 1953.

of the most important problems of education. From my own experience, I would say that the most helpful catalyst other than time, in this complicated chemical reaction, is work. Happy and fortunate is that man upon whose shoulders the yoke of work fits comfortably! Work matures the adolescent mind. It soothes the troubled mind, and is the best balm for the abrasions and trials of life. If work is the curse of heaven, how sweet can its blessings be?

1887

Almost sixty-six years have elapsed since the founding of this Academy. In that very year (1887), Edward Bellamy wrote his famous Utopian novel, "Looking Backward," in which he depicted life in America in the year 2000. It has been said that, of books published in the last twenty-five years of the nineteenth and the first twenty-five years of the twentieth century, Bellamy's "Looking Backward" has had more influence on the progress of thought that any other book, save "Das Kapital," by Karl Marx. Forward looking and imaginative as Bellamy's book was, accomplishment has exceeded Bellamy's most startling of many clairvoyant prophecies on all scores, save that of human behavior. The "Rosebush of Humanity" which was to grip the peoples of the world in a warm glow of fraternity and love of his fellow man, such that war would cease to exist and thereby make standing armies and navies unnecessary—that rosebush still remains a figment of the imagination, expressed now and then in the buoyant and expectant hopes of many peoples who would like to believe that the differences which separate people can be resolved by means other than war. The echoes of the battles of words coming from the conclaves of the representatives of governments where we believe these issues should be resolved peacefully tell us plainly that there, too, as in most spheres of human activity, a relentless struggle for advantage and the upper hand is continuously in progress. Recourse to dialectics never was and never will be the pass-key to salvation in any endeavor. We must look to devices more promising than words before the "Rosebush of Humanity" can awaken the sympathies and still the combativeness of man such that man will come to believe that his own welfare and that of all peoples is dependent upon a spirit of co-operation, mutual helpfulness and trust.

The First Meeting of the Academy

The first meeting of the Minnesota Academy of Medicine was held at the Ryan Hotel in St. Paul on November 5, 1887. The transactions of the meeting were published in the November 15 issue of the *Northwestern Lancet,* the forerunner of the present *Journal-Lancet.*

We are told in an editorial comment on that meeting by the editors, Alex J. Stone and William Davis (Associate Editor), that approximately thirty-five of the forty men made members in two previous organizational meetings were present. They also commented as follows:

> "It is a humiliating confession of the superiority of body over the mind, that no medical society having frequent meetings can hope to keep alive the interest of its members, unless it furnishes something in the way of a supper at its gatherings. The Academy recognizes this fact, but it seems to us it is rather inclined to overdo the matter, if the spread furnished at the Ryan is a sample of what is to be expected at the meetings."

The editors then went on to suggest that they regarded it as preferable to reverse this order of things and to have the scientific papers read before the repast.

During the twenty years that I have been privileged to be in attendance at these meetings, I must say the Academy and the Town and Country Club have collaborated to provide a friendly atmosphere and to serve dinners of a rare quality which have left a wonderful relish on our mental palates that has survived long beyond the mere enjoyment of such nice occasions.

John F. Fulton, the first president of the Academy, delivered his inaugural address on the occasion of the first meeting—a procedure which has been reversed such that the president now finds it his duty to try to say a few words appropriate to the occasion when he leaves the stage rather than when he first comes on. This arrangement can be a source of real comfort to the speaker, for no one expects any evidences of serious thought in a swan song. In Kansas, the State bird is the mythical Jayhawk, which is said to fly backward, because it is more interested in where it has been than where it is going. Now, I presume, the only survivor of this professed greater concern for the past than for the future is typified in the addresses of retiring presidents of professional and scientific organizations. Inasmuch as the incoming president of this Academy is known to all the members a year in advance, a return to the original plan of having the president look ahead rather than back might bring the presiding officers to a fuller realization of their important responsibility. In any case, let me say that I wish I could feel that someone happening upon the pages of this presentation sixty-six years hence could reread these lines with a fraction of the pleasure with which I perused the forward-looking and stimulating paper of Dr. Fulton. It was a worthy inaugural for an organization which survived the pains of birth and has now come of age.

The other paper of that first meeting of the Academy was read by George F. French and dealt with the sexual problems of uncongenial marriages from the standpoint of the female. Ten persons participated in the discussion, all distinguished names of their day and well-known to most of us. Interestingly enough, a good share of the discussion hedged about the ills and prevalence of masturbation in the female, a subject that most physicians now are content to ignore, or when it needs attention to direct to the psychiatrist, the only person believed to be urbane and erudite enough to handle a subject of such delicacy with any suggestion of competence.

Thereafter for long years the Academy met alternately at monthly intervals, save for the summer season, at the West Hotel in Minneapolis and the Ryan Hotel in Saint Paul. In May, 1900, the meeting place was changed to the Minnesota and the Minneapolis Clubs. Subsequently, meetings were held at the Commercial Club in Saint Paul and the Minneapolis meetings returned to the West Hotel. In February, 1907, meetings were renewed at the Minnesota and the Minneapolis Club. Since the April meeting of 1911, with few exceptions, the Academy has continued to meet at the Town and Country Club.

On the occasion of Osler's visit to the Twin Cities in October, 1902, Osler also addressed the Academy. The subject of his address was "License to Practice" and the meeting was held at the State Capitol in the Hall of Representatives because of the larger meeting place and the interest of legislators in Medical Practice Acts. It probably should be said here that when Osler spoke on the Campus, President Northrop had to discourage student attendance at the lecture. How times have changed since then! Lectures on the Campus now, even by men of national prominence in medicine, are attended often by only a thin smattering of medical students. It is even problematic whether the announcement of a lecture by Kinsey on the vagaries of sex behavior would draw the students out to an extracurricular exercise. These reactions on the part of students are difficult to understand. What is required, they will do, but there appears to have been since World War II a growing apathy on the part of students toward unassigned tasks. It is not a healthy sign.

In 1887, when the meetings of the Academy began, it was ten miles between the populated borders of the Cities. Transportation was by train or by horse and buggy. Whereas a horse-drawn Street Railway system had been operated in both cities since 1875, it was December, 1889, before the first line was electrified, a process which was not completed for all the lines until 1892. The first inter-city line became operative in 1890.

How times have moved on since then in means of communication and travel! That our traffic problem still needs study and improvement, I believe all of us will concede freely.

Awakening of Interest in Medical Education

The first meeting of the Academy took place about two years before the beginnings of the Medical School of the University of Minnesota. The year our Medical School opened its doors (1889), a more significant event for greater Medicine occurred in Baltimore with the founding of the Johns Hopkins Hospital. With the aid of John Shaw Billings, Librarian and founder and builder of the Surgeon-General's Catalogue to medical literature, Daniel Coit Gilman, President of Johns Hopkins University, began the task of building a strong Medical School Staff. That departure from current practice in looking beyond the local scene for talent with which to fill the important posts in Medical Schools, has come to have great importance for Medicine in this country. C. W. Eliot, President of Harvard University, had begun as early as 1870 the renovation of the existing proprietary scheme of instruction, by which the Faculty pocketed the tuition fees. Two interesting letters of this period from Oliver Wendell Holmes to his friend, Motley, depict the opposition of the Faculty to these suggested innovations. Holmes' sympathies too were on the side of the Faculty. He characterized Eliot's efforts at reorganizing the Medical

School as flopping it over like a flapjack in topsy-turvy turmoil. Eliot won out and reorganized the Faculty on a true University basis, incorporating the Medical School as an integral part of Harvard University. Though carrying the name, the Harvard Medical School was, in reality, and had been since 1810, a voluntary proprietary organization, running its own affairs. Harvard University having no hospital of its own was, of course, unable to effect such sweeping changes as Gilman had set in motion at Hopkins. Presently, however, the movement of house-cleaning in the medical schools was in full-swing, and shortly after the publication of Abraham Flexner's report (1911), unmasking the existing deplorable condition of most medical schools in the country, the proprietary schools began to disappear. A reorganization of our own Medical School began with the coming of President George Edgar Vincent in 1911, and between 1914 and 1917 the plan of having all full-time teachers in the preclinical sciences had been completed. At the very same time at Johns Hopkins, the plan of having all the Heads of the Clinical Departments on full-time had been initiated—a plan that set the pattern for all medical schools in the country, and one which has now become standard practice in most of them.

An Exciting Period

There probably has been no more exciting period in the history of medicine than the years which saw the founding of this Academy. The battle of words over the contagiousness of puerperal fever had been fought and won, though even this victory failed to connote to the profession the great importance of the work of Pasteur (1862) and Lister (1867). When Lister came to this country to the first Centennial celebration in 1876, his reiteration of the importance of the antiseptic principle in surgery fell upon unprepared minds. In any case, when President Garfield was shot in 1881, the frequency with which his wounds were probed by many well-known surgical consultants, without any allusion to employment of Lister's antiseptic methods, suggests that Lister's teachings had fallen on deaf ears. Certainly all of the Consultants must have read some of Lister's papers and some of them must have heard his oration in Philadelphia at the time of the Centennial. All of which goes to indicate that the transference of knowledge from one area of learning to another is rarely, if ever, an overnight phenomenon. The ready acceptance of anesthesia by the entire medical world is, of course, a notable exception. And the more recent success of the sulfonamides with phlegmonous inflammations had prepared the way for ready acceptance of penicillin. Moreover, use of the experimental method in these latter researches lent simultaneous incontrovertible proof of the protection afforded by these antibiotics.

By 1887, when this Academy came into existence, the science of Bacteriology was well on its way. The cause of a host of bacterial diseases had been resolved. Meaning and understanding suddenly seemed to have penetrated into the aura of confusion which enveloped most diseases. Every physician lived in an atmosphere of hopeful expectancy. The discovery of the cause of many baffling affections was being made several times a year. With the employment of new techniques, the mysteries of the unknown in medicine were being probed with more success than had attended the efforts of countless observers over more than twenty centuries. The veil of despair was being lifted. There were evidences on the horizon of restoration of public confidence in medicine. For the first time in history, medicine became the recipient of magnanimous benefactions and bountiful philanthropy. Little wonder that Fulton, in his inaugural dissertation, was prompted to assert that abdominal surgery has been placed upon a basis of scientific accuracy.

Leeching and Blood-letting Still in Evidence

Still, all the useless therapeutic devices of the past had not yet been given up. John Ashhurst, editor of the International Encyclopedia of Medicine and Surgery, writing of the treatment of intestinal obstruction, said in 1886:

> "I have no hesitation in saying that the remedy of prime importance is direct depletion by blood letting. I would have no hesitancy in using it if leeches could not be procured. I have seen the whole aspect of a case changed by the application of leeches immediately over the inflamed aspect of the bowel. If the patient is a vigorous adult, at least 12 ounces of blood should be taken away. . . . After leeching, the whole abdomen is covered with mercurial ointment and a warm mush or hop poultice, then applied over all."

The poor hereditary background of the surgeon, as represented in part by the modern barber pole, together with observations of his sanguinary practices at operation, would appear to justify the disparaging reference of leech, which even nowadays is occasionally applied to surgeons. But let it be remembered that in the John Wycliffe Bible of 1382, St. Luke admonished, "Leech, heal thyself." Now, you and I know from an acquaintance with the King James version of 1611 that this allusion was to physicians!

A century before the birth of this Academy, the attitude of John Coakley Lettsom, one of the founders of the Medical Society of London, toward blood letting was stated in this well-known doggerel—

> "When people's ill, they come to I,
> I physics, bleeds and sweats 'em;
> Sometimes they live, sometimes they die,
> What's that to I? I lets 'em."

There is little evidence that the practice or its justification in such terms, increased the confidence of the public in the Medical Profession.

And if one scans the medical texts of John Ashhurst's day, it will be found that leeching and bleeding were still being advised for a number of disorders. In 1892, the very year in which Osler presented on the Campus of the University of Minnesota his memorable address on "Teacher and Student," the first edition of his great textbook, *Principles and Practice of Medicine* appeared. In it, Osler said concerning blood letting: "The reproach of Van Helmont that 'a bloody Moloch presides in the chairs of medicine' cannot be brought against the present generation of physicians. During the first five decades of this century, the profession bled too much, but during the last decades, we have certainly bled too little. Pneumonia is one of the diseases in which a timely venesection may save life." This indication for phlebotomy was still to be found in the eighth edition of the same text, which the medical student of my day read. Napoleon once remarked that there are evidences of Charlatanism in every age. The next generation will probably find palpable evidences of its survival well into our present period. And on that score the advice of a brother physician of nineteen centuries ago is worth heeding. Said Luke: "Thou hypocrite, cast out first the beam out of thine own eye, and then shalt thou see clearly to pull out the mote that is in thy brother's eye." Mote and beam in the Revised Standard Version of the Bible have become speck and log. Though with a ring of less eloquence, let us hope that this restatement of the metaphor may come to have increased meaning for its readers.

More than twenty years were to intervene beyond the founding of this Academy, before the transfusion of blood came to supplant phlebotomy. It is only in our own day that we have come to appreciate fully how complicated a scientific procedure the transfusion of blood can be. And refinements and improvements are being added continually. Such is the history of all progress!

Vital Statistics

The story of the birth of Christ tells us that the Romans had their registries for the recording of the census. There is no evidence of a regular system of registration of births, marriages and deaths prior to the institution of the practice in Geneva in the middle of the sixteenth century. Lord John Russell introduced a plan for the registration of vital statistics which the British Parliament enacted as law in 1836. Massachusetts began its scheme of registration of vital statistics in 1842. In the recording of the seventh federal census in this country in 1850, the first attempt was made to obtain figures on mortality for all the States in the Union. Minnesota, together with New Mexico, Oregon and Utah, were then still listed as Territories. Minnesota became a State in 1851. This interesting report was prepared under the direction of J. O. B. DeBow, Superintendent of the Census, and was published in 1855.

The "Zymotic" diseases were responsible for 40.8 per cent of the deaths in the 1850 census. Diseases of the respiratory system stood second in importance, being responsible for 16.9 per cent of the total mortality. Consumption, as such, was not mentioned by name. However, tuberculosis and pneumonia undoubtedly were the large contributors. Cholera, dysentery, fever, typhoid fever, scarlet fever and croup in that order were the most frequent causes of death listed under zymotic diseases. And in the new Blakiston edition of Gould's Medical Dictionary of 1949, the word zymotic is not to be found! And the threat of these diseases disappeared long before the word.

Geography and Disease

The year before this Academy came into being (1886), a Report on the Mortality and Vital Statistics of the United States came into print from the Government Printing Office at Washington under the authorship of John S. Billings, Surgeon of the United States Army. It was a compilation derived from the tenth census of 1880. The text contains many maps in color depicting the importance of geography upon mortality and the incidence-location of fatal diseases. As we examine these interesting maps now, it is quite apparent to anyone that many factors had to do with the reported incidence of these diseases. But probably more important than any other consideration for us is to recall now that, in the main, geography had little, if anything, to do with these diseases. All of them like tuberculosis, diphtheria, scarlet fever, typhoid fever, and a host of others were found to have specific causes. In only a few diseases, typified by malaria, have geographic studies been of primary importance in tracing down the actual causative agents. At best, such differences in geographic distribution are only suggestive. Ultimate causes must be sought in the more critical areas of thinking and research. Those who are presently enamored of the importance of geography in the study of cancer might well study these maps compiled by the Bureau of the Census in 1886.

Suggestions of Strife Between Specialists and General Practitioners Are Not of Recent Origin

"The chief objection brought against specialties is that they operate unfairly against the general practitioner in implying that he is incompetent to properly treat certain classes of disease and narrowing his field of practice." Lest some of you conclude that this was a recent expression from a member of the Academy on General Practice, let me hasten to add that this statement was contained in a Report of the Committee on Specialties of the American Medical Association published in the transactions of their Journal for 1869. It is obvious therefore that long before the beginnings of this Academy there was a feeling of competition between those who professed to be Specialists and those who accepted the role of General Practitioners.

We see about ourselves everyday evidences of a regimented society. Every Utopia reveals unmistakable traces of such regimentation. There is no Heaven without a Hell; no State in any era of civilization or in any projected Utopia without its prisons, hospitals and almshouses. Such has always been the condition of society. Regimented as we are today, I know of no imaginary Utopia in which the individual enjoyed as much freedom as we have today. We who are privileged to live here in America need to recount our blessings frequently.

Medicine could not deliver a good brand of medical practice to the public today without a large number of General Practitioners. Will that be the situation in the year 2000? Who can tell? I have the impression that if there were available now an adequate number of places for satisfactory training in all the specialties of medicine and surgery, which training would be fully acceptable to Boards which are authorized to pass judgment upon the adequacy of such training—if such places of training were to become generally available, I could well believe that the clinic idea to which the Brothers Mayo lent such great impetus might well become the standard condition of practice throughout our country. I am inclined to believe that if such training areas were available that the idea of broader specialty training might find acceptance with both the public and physicians. However, only time will tell. It certainly is not a development that can come about readily.

The Medical Profession needs to work out for the welfare of the public, as well as for its own good, happier existing relationships between General Practitioners and Specialists. Obviously, there may have to be some give and take on both sides. What is best for the public will eventually prevail, and in the long run is best for medicine too. The General Practitioner is usually the first contact of a patient with the Medical Profession, and properly so. He is medicine's first-line consultant. He must be prepared to assume some responsibility for every type of illness.

The patient and the public sometimes view with alarm early contact in an illness with a Specialist. The public is inclined to believe, on the basis of earlier experience, that the Specialist is too narrow and myopic in his views; that he is too inclined to assess the patient with high-powered lenses in his own field of interest, screening all other areas out of focus. Specialists probably do better on this score than in earlier years, but in general the criticism is still valid. Very few Specialists deserve the term of Physician in a limited domain. Cultivation of a universal focus of interest on all functioning parts of the patient's anatomy is not easily achieved by any physician, no matter what his profession of interest is.

The Academy

Academy is a spirited word. Ever since Plato taught in the olive groves of Acadame, Academy has come to be synonymous with the cultivation of learning. Distinguished societies have adopted the name. In Europe, particularly in France, Academies of Literature, Arts and Sciences, as well as in the special provinces of Learning, came early to typify an interest in scholarship at the highest level. Milton in his well-known tract on education, conceived of an Academy as something intermediate between a University and a College. In our country, an Academy has come to be synonymous with a school of instruction. The only survivals in our telephone book listed under the title are an Academy of Accountancy and another where the art of horseback-riding is taught.

The New York Academy of Medicine

The New York Academy of Medicine celebrated its first Centennial in 1946. Many of you are undoubtedly familiar with the excellent volume by Philip Van Ingen, published by the Columbia University Press in 1949, setting forth the History of that Academy. From small beginnings, the New York Academy of Medicine has come to exert an important influence on medicine in this country. It has the largest medical library in the United States next to the Surgeon General's and it probably serves more readers than any other medical library in the world.

The membership of the New York Academy of Medicine is in the area of 2,400. Its annual income from dues in 1946 was $88,000. Yet this organization has an endowment of $4,000,000, and an annual income of more than one-third of a million dollars each year. In the beginning, it did not own its own home, but now it has a magnificent building for meetings, as well as to house its wonderful library.

The New York Academy of Medicine has a group of Committees which function in many ways to assess the temper of the relations between the medical profession and the public. It has done a very important job on this score, not alone in the area of practice, but also in medical education as well.

The New York Academy of Medicine has more than a century of experience. That development obviously could have occurred only in a large metropolitan area like that of New York City. But most important of all, it has had strong and generous men of vision at the helm over long periods of years who have given the Academy distinguished directional leadership.

Our Academy

The Minnesota Academy of Medicine has now been in existence for two-thirds of a century. It came into being, when the State of Minnesota could count only slightly more than one-third of a century in years. In the main, it has been essentially a Dining Club of Professional Men interested primarily in the practice of medicine. It has never taken on the sustained support of any continuing endeavor. We have no home of our own, nor is it necessary that we should have one. We have no library; we have rather meager funds, there being less than $9,000 in our treasury. However, we do have a long tradition of counting amongst our members a large number of distinguished persons in the Specialties of Medicine in the Twin Cities, including also a lesser number of members scattered throughout the State. Anyone who has been long a member of the Academy cherishes memories of evenings spent here with pleasure and profit, chatting and dining with his friends and listening to their presentations.

The character of our programs has changed quite remarkably within the last few years. Up until approximately fifteen years ago, the program was constituted largely from within the membership. As the years have gone by, and especially during the last few years, a rather large proportion of the papers have been given by young men who have done distinguished research in the Medical School of the University of Minnesota. In a sense, this is very fitting. We are all anxious to become alert to the newer developments in medicine. Moreover, we all have an anxiety to become acquainted with young men who are doing significant work in research. It is very proper therefore that the Executive Committee of the Academy during the past few years should have encouraged this trend in our programs. We are all beholden to them for their foresight in lending emphasis to that which is *new* in Medicine.

We are essentially a group of Specialists in Medicine with a primary focus of interest on practice. All of us are aware of the great influence which research has had upon progress in Medicine. The art and the practice of Medicine have been changed for the better considerably through the agency of research.

As the Academy begins now its final third of its first century of existence, we might well contemplate taking on some function beyond that of a Professional Dining Club with an evening's scientific program. Those organizations and individuals, who can point only with pride to their predecessors, find, like the potato vine, that their best portion is underground. Would it not be worthwhile asking the Executive Committee to give consideration and thought to finding some special function which the Academy might take under its protective wing? Through such an agency, the life and influence of the Academy would be perpetuated and transmitted more directly to our successors in a tangible, objective manner. Such a manifestation of appreciation of our opportunities and recognition of our collective obligation to our profession would have the additional advantage of making a contribution to the furtherance of our art and practice.

There are undoubtedly many ways in which such an objective could be achieved. The records of the Academy indicate that Dr. S. Marx White in the November meeting in 1908, two years before he assumed the presidency of the Academy, suggested that the Academy consider the establishment and support of a Fellowship at the University of Minnesota. It is interesting to observe that the following month the membership approved of the suggestion and voted an assessment of $5 per person to support a Research Fellowship Fund at the Medical School. As far as is known, the only temporary occupant of that position was Dr. F. W. Schlutz, who many years subsequently became Professor of Pediatrics at the University. We do therefore have a precedent for such a suggestion.

In 1953, such an annual assessment against each member of the Academy would not go far in the support of a Fellowship. Inasmuch also as we represent all the Specialties of Medicine, it probably would be more proper to consider something which might be shared equally by the Specialties of Medicine. A suitable triennial or quinquennial prize to be given to that person in the United States, whose research in the opinion of the Academy's Committee has given the most important impetus to the furtherance and improvement of medical practice—such an award might become a function of the Academy. However, I am inclined to believe that, however important such a prize in future years may come to be, nevertheless, the administration of such a project would in itself be a very difficult task. Moreover, I am inclined to believe that the support of Scholarship through an annual gift to the Medical Library of the University of Minnesota would have a more telling effect; also that such an endeavor would be more suitable to our purposes.

When Osler came here to give his famous lecture on the campus of the University of Minnesota in 1902, President Northrup announced that the Medical Library of the Medical School had a thousand volumes in its collection. The situation has changed considerably for the better since then, and the Library also has improved correspondingly. If the Academy would take on the responsibility of sponsoring some function served by the Medical Library in a sustained manner, the Academy could well become a Patron of Scholarship in the Medical School. That also would be a function which we could all enjoy and the Academy could come to be a continuing contributor to an important and a living function of this Medical Community.

The New York Academy of Medicine came into being to help increase the confidence of the public in the Profession and to help stamp out the "rampancy of quackery." In the 1940 Constitution of the Academy, the specific purposes of the New York Academy of Medicine are listed as "support of the science and art of medicine, the maintenance of a public medical library, and the promotion of medical health and medical education." It has done its task well.

Nothing in life gives such directional growth to development as does the assumption of a serious purpose. I believe that our own Academy needs such an influence. How else can we attain the stature of importance in this Medical Community which our Founders contemplated so long ago?

Every physician needs breadth of vision which can come only through experience and study. And the true specialist must, in a sense, be a scholar. If he were not, he would not be a specialist. Scholarship must of necessity be an unrelenting and continuous labor. Johann Fichte was one of the early prophets of a budding scholarship in

Germany toward the end of the eighteenth and the beginning of the nineteenth century. Fichte's theme was cultivation of reverence for knowledge and scholarship as the mark of a scholar. I believe that all professions would do well to consider stimulation of scholarship within their provinces of action as an important function of such professional organizations. Fichte differentiated students into two classes, "Die Studierte"—students who have studied and "Die Studierende"—those who study. If it could be said that it were necessary to become classified among "Die Studierende" to become eligible for membership in the Minnesota Academy of Medicine, we would all note within our midst a quickening of interest in scholarship. Alma Mater are words, spoken with tender affection by many an alumnus who may fail to appreciate that these two noble words are synonymous with Foster Mother. If we were to assume the role of foster parent to scholarship in this medical community, we would contribute to our own development, afford ourselves a source of continuing satisfaction and begin an enterprise which one of our own Julian Wests might view with pride, looking back from the year 2000 as did Edward Bellamy's hero of that name in "Looking Backward." Our own Julian West might then say for us: "Well done, members of the Academy in the 50's, all your best is not underground."

A good library can have a tremendous catalytic effect upon the cultivation of superior scholarship. The love of books and the pursuit of learning can vitalize the intellectual life of any organization. Love of books and love of learning go hand in hand. A fine collection of books adds a savor to scholarship which fosters an interest in learning, sharpens the appetite for books and enriches the lives of all who come beneath the spell of scholarship. Every professional library should have its own Arthur Upson room where the professional students can attain a ready acquaintance with the best books of literature in the world. Who, amongst practical men, is in greater need of an acquaintance with good books than physicians? Without a large endowment but with sustained support from year to year, any organization could well become the foster parent of an important Treasure Collection for the Library of the Medical School which could come to have a telling effect upon scholarship in this Community. Why not the Minnesota Academy of Medicine?

TABLE I. POPULATION AND PHYSICIANS IN MINNESOTA AND THE TWIN CITIES

1890 and 1950

	1890	1950	Increase in Population
POPULATION			
Minnesota	1,301,826	2,982,483	230%
Minneapolis	164,738	521,718	280%
Saint Paul	133,156	311,349	
PHYSICIANS			
Minnesota	1,191	3,886	325%
Minneapolis	280	1,141	340%
Saint Paul	201	511	

Should the Academy Enlarge Its Membership?

The accompanying table gives an indication of the change in character in the population and in the number of physicians in the State and in the Twin Cities, during the past sixty years. There obviously has been greater urbanization amongst physicians than in the population as a whole.

There is also probably an even greater concentration of specialists in the Twin Cities now than there was in 1887. Moreover, we have also a rather large family of new specialties, unknown then. Amongst others are: Neurosurgery, Pediatrics, Psychiatry, and Roentgenology, to mention only major new specialties of practice.

It would appear therefore that in 1953, based on an active membership of forty for 1887, it would not be out of line to suggest a steady and gradual increase of our present active membership to 150 persons—approximately a 75 per cent increase in total membership.

The fundamental question that the Academy has to decide is whether it wants to remain essentially a Professional Dining Club or whether it is ready now to assume some of the broader functions implied in the name of glorious origin, Academy. When the German Surgical Society came into being, there was considerable difference of opinion expressed amongst its founders as to what role it should assume. Billroth favored a small informal group in which chatty types of papers would be presented. Langenbeck, however, visualized a large organization with emphasis upon a strong program. Langenbeck's opinion prevailed, and up until World War I, it probably was the strongest surgical organization in the World. If we want this Academy to continue to radiate in this Community, the influence in medicine which our founders had in mind for it, two-thirds of a century ago, we would do well to ponder now Langenbeck's views, as they relate to the nature and responsibilities of our own Academy.

One more suggestion and I am done. I would like to see persons newly elected to membership join us at the *first meeting* following their election. I would remove the clause which makes it mandatory to present a written thesis before a person, elected to membership, can take his place amongst us. In lieu of this provision, he might be asked to submit to the Program Committee an abstract of a paper that he is prepared to present before the Academy. Journals are not in want of materials to print today, and the acceptance of a paper for publication is better left to the discretion of the editors.

It had been my intention to review some of the developments and trends in my own field of surgery which have occurred since I began the study of Medicine thirty-five years ago. However, these are well known to all of you, and many of you will be relieved, I know, to learn that I shall not try your patience by such a recitation now. It would be more proper to attempt to indicate what steps might be taken to resolve some of the pressing problems which confront surgeons today. On that score, I must plead incompetence to assume such a task and remind you that it is far easier to look two centuries back that it is to look five years ahead. A handsome Greek youth, Narcissus by name, is said to have gazed into a fountain and became so enamored of his own beautiful reflection that he pined away, being unable to satisfy his love of his own countenance. Mirror-gazing which engenders feelings of self complacency and satisfaction over our accomplishments is as dangerous an occupation today as it was in the days of the Greek Goddess, Nemesis, who meted out retributive justice to those who were given to too much self-adoration.

While we view with satisfaction the early years of our Academy and speak out in a spirit of grateful thanksgiving for pleasant moments spent together here in good fellowship, let us meditate the question of what legacy we want to bequeath to our successors in the Academy, who, a few decades hence, will help launch this Academy upon its second century. Will they be as satisfied with us as we ourselves have been? While we deliberate upon this matter, may I suggest that you join me in the prayer that our judges will be merciful?

NUTRITIONAL IMPLICATIONS OF SODIUM RESTRICTION

In the preparation of diets restricted to less than 0.5 gm. of sodium daily, alterations from the diet usually considered optimum may be necessary. Thus, a reduction in animal protein and the nutrients usually associated with it may be required, and certain other foods specifically prepared to remove naturally occurring sodium may be added to the diet. These alterations in the usual dietary customs of persons may sometimes compromise optimum nutrition, a matter to be seriously considered by physicians prescribing a low-sodium diet.

Such changes in the diet as the omission of salt for seasoning, using sweet butter, low-sodium bread, and omitting foods naturally high in sodium should involve no nutritional difficulties, except for any attendant decrease in taste appeal. The same is also true for processed foods packed without added sodium salts.

Limitations in the amount of meat and eggs allowed per day will sometimes be necessary, particularly if the daily sodium intake is to be 200 mg. or less. This involves a decrease in protein of high biological value and of the concomitant vitamins of the B complex.

The processing of foods to remove natural sodium may decrease the content of certain other nutrients. Products such as these are appearing on the market in increasing numbers and may be highly desirable because of the low levels of sodium they provide. At present, the extent of the reduction in nutrients other than sodium in these foods is not known, in many instances, but efforts will be made to procure this information and make it available to physicians.

Thus, the physician prescribing a low-sodium diet must weigh carefully the therapeutic benefits to be expected against the consequences of a possible reduction in the intake of essential nutrients. This may be particularly true of persons already malnourished or with conditioning factors such as defects in digestion and absorption or abnormalities in intermediary metabolism.

The Council will consider for acceptance foods packed or prepared without added sodium provided the food is otherwise acceptable and provided the sodium content appears on the label (in milligrams per 100 gm.) in addition to a statement such as "Packed without added sodium." The Council will also consider foods processed to remove naturally occurring sodium. When significant loss of nutrients, other than sodium, is shown to have occurred, a statement to this effect must also appear on the label and detailed information concerning this reduction in specific nutrients must be made available to the Council and to physicians likely to use the product. —JAMA, Council on Foods and Nutrition, August 2, 1952.

A STUDY OF MASSES IN THE RIGHT LOWER QUADRANT OF THE ABDOMEN

J D MORTENSEN, M.D. and J. ARNOLD BARGEN, M.D.
Rochester, Minnesota

WHEREAS there is abundant medical literature pertaining to right-sided lower abdominal pain, little factual or statistical information is available concerning the problem of a palpable mass in the right lower quadrant of the abdomen. Such a lesion is not uncommon in medical practice, and while familiarity with the problems it presents is the rightful domain of all medical practitioners it would seem to be of special importance to surgeons, diagnosticians, gastroenterologists, urologists and roentgenologists. In an effort to obtain reliable statistical information regarding the problem presented by this condition, data on a group of patients who had this lesion and who had been examined and treated at the Mayo Clinic have been collected and studied, these data forming the basis for this communication.

Method and Material

A study was made of the case records of all patients who were examined at the Mayo Clinic during the year 1944 and for whom a diagnosis of palpable mass in the right lower quadrant of the abdomen was recorded. In addition a review was made of the records of 5,879 patients who were examined during the same year and who had a condition which could be a possible cause for a mass in the right lower quadrant of the abdomen. In this manner 468 patients were found to have a palpable mass in the right lower quadrant, and in 455 of these patients the cause of the mass could be considered to be proved, either by operation, postmortem examination or unequivocal clinical findings and subsequent course. This study is concerned primarily with the 455 cases.

In the evaluation of data available from the case records an attempt was made to answer the following questions, thought to be of clinical significance in the handling of patients who have a mass in the right lower quadrant:

1. What is the incidence of such masses in clinic patients and what are the age and sex distributions of patients with this lesion?
2. What lesions may cause such a mass and what is the frequency of occurrence of these lesions?
3. What is the accuracy of the clinical or preoperative diagnosis of the cause of the mass?
4. What methods of examination are most useful in determining the cause of the mass?
5. What is the role of surgery in the management of the patient with such a mass?

TABLE I. AGE AND SEX DISTRIBUTION OF PATIENTS WITH A MASS IN THE RIGHT LOWER QUADRANT OF THE ABDOMEN

	Patients		
Age, years	Male	Female	Total
0 to 9	3	2	5
10 to 19	9	7	16
20 to 29	7	18	25
30 to 39	26	69	95
40 to 49	23	102	125
50 to 59	30	60	90
60 to 69	28	43	71
70 to 79	12	13	25
80 to 89	1	2	3
Total	139	316	455

Results

Incidence, and Sex and Age Distributions.—The 468 patients with a mass in the right lower quadrant of the abdomen comprised 0.36 per cent of the clinic registrants during the year 1944. This agrees rather well with the findings of Butler and Bargen who reported that about 1 of every 200 clinic registrants had such a mass.

It was somewhat surprising to note that women greatly outnumbered men (ratio of 2.3 to 1) (Table I). This is probably explained by the fact that women have two organs in this region not found in men, namely, the uterus and the right ovary, both of which are commonly the site of mass-producing lesions.

The age distribution indicated that this is a lesion of middle age—about two-thirds of the patients studied were in the age group thirty through fifty-nine years (Table I). Extremes in age were three weeks and eighty-six years.

Dr. Mortensen is a Fellow in Surgery, Mayo Foundation, University of Minnesota.

Dr. Bargen is a member of the Division of Medicine, Mayo Clinic, Rochester, Minnesota.

TABLE II

LESIONS FOUND TO BE THE CAUSE OF A MASS IN THE RIGHT LOWER QUADRANT OF THE ABDOMEN

455 CASES

Lesions according to site	Cases		
Gynecologic			169
Uterus		73	
Fibromyoma	59		
Endometriosis	8		
Adenocarcinoma	5		
Fundus adherent to scar of abdominal wall	1		
Ovary		72	
Cystadenoma or simple cyst	26		
Cystadenocarcinoma	20		
Endometriosis	12		
Solid ovarian tumor	9		
Cystic oophoritis and perioophoritis	5		
Fallopian tube		12	
Tubal pregnancy	5		
Chronic salpingitis with hydrosalpinx	4		
Adenocarcinoma	2		
Endometriosis	1		
Pelvic peritoneum		12	
Endometriosis	5		
Adhesions	3		
Pelvic abscess	4		
Gastrointestinal			125
Cecum and ascending colon		71	
Adenocarcinoma	56		
Fecal mass in cecum	7		
Actinomycosis	3		
Tuberculous typhlitis	2		
Chronic ulcerative colitis	2		
Lymphosarcoma	1		
Ileum		29	
Regional enteritis	22		
Ileocolic intussusception	4		
Tuberculous ileitis	3		
Descending and sigmoid colon		11	
Adenocarcinoma	6		
Diverticulitis	4		
Chronic ulcerative colitis	1		
Transverse colon		9	
Adenocarcinoma	6		
Chronic ulcerative colitis	2		
Lymphosarcoma	1		
Appendix		4	
Acute appendicitis	2		
Mucocele	2		
Stomach		1	
Adenocarcinoma	1		

Lesions according to site	Cases	
Renal		74
Polycystic disease	17	
Hydronephrosis	16	
Ectopic or nephroptotic kidney	14	
Normal palpable kidney	10	
Renal cyst	7	
Perinephritis or perirenal abscess	4	
Carcinoma (Wilms', hypernephroma)	3	
Palpable horseshoe kidney	2	
Renal tuberculosis	1	
Intra-abdominal		24
Peritoneal carcinomatosis	12	
Appendical abscess	6	
Metastatic lesion of mesenteric node	2	
Mesenteric cyst	1	
Tuberculous peritonitis	1	
Peritoneal endometriosis	1	
Internal hernia	1	
Abdominal wall		20
Sinus tract of fecal fistula	10	
Incisional hernia	4	
Lipoma	2	
Endometriosis	3	
Desmoid	1	
Inguinal region		16
Cryptorchidism	9	
Metastatic lesion of inguinal node	3	
Incarcerated inguinal hernia	3	
Hydrocele of canal of Nuck	1	
Urinary bladder		8
Distended (obstructed) bladder	3	
Adenocarcinoma	3	
Diverticulum	2	
Retroperitoneal		7
Malignant lymphoma	3	
Aortic aneurysm	2	
Iliac aneurysm	1	
Abscess	1	
Liver		6
Riedel's lobe	2	
Cysts	2	
Metastasis	1	
Cirrhosis	1	
Miscellaneous		6
Hydrops of gallbladder	2	
Carcinoma, prostate	2	
Carcinoma, head of pancreas	1	
Osteochondroma, ilium	1	

Etiologic Factors.—The lesions responsible for the masses in the right lower quadrant of the abdomen are indicated in Table II.

The sites of the disorders causing a palpable mass, as determined by study of the 455 case records, were divided into three groups: (1) the common sites, (2) the occasional sites, neither common nor rare, and (3) the unusual or rare sites. Two hundred and ninety patients (63.7 per cent) had a mass in one of four organs, namely, the uterus, the right ovary, the right kidney, and the cecum and ascending colon. Neoplasms produced most of the masses in these organs, although hydronephrosis and malposition accounted for many of the palpable renal masses. Each of these common sites accounted for about 15 per cent of the masses studied.

In the group of occasional sites, lesions of the peritoneum were the most common, inflammatory lesions and carcinomatosis each causing about half the peritoneal masses. Lesions of the terminal part of the ileum accounted for twenty-nine of the masses, regional enteritis being the most common such lesion. The mass was located in the abdominal wall in twenty cases. Less common sites included the right inguinal canal, the right fallopian tube, and the descending and sigmoid colon. The group of occasional sites accounted for 121 (26.6 per cent) of the 455 cases. Each organ in this group was the site of between 2 and 8 per cent of the masses studied.

In the group of unusual sites there were eleven organs, each harboring a palpable mass in less than 2 per cent of the cases. Collectively these organs accounted for forty-four (9.7 per cent) of the masses. Organs or tissues in this group of unusual sites included the transverse colon, urinary bladder, retroperitoneal tissues, liver, appendix, mesentery, gall bladder, prostate, pancreas, stomach and ilium.

The lesions producing the right lower quadrant masses in these 455 cases may be classified, according to pathologic nature of the lesions, as follows: malignant neoplasms, 128 cases (28.1

per cent); benign neoplasms, 112 cases (24.6 per cent); inflammatory lesions, 98 cases (21.5 per cent); mechanical or structural disorders, 60 cases (13.2 per cent); and developmental or degenerative disorders, 57 cases (12.6 per cent). It can thus be seen that neoplasms (benign and malignant) accounted for more than half of the masses.

Accuracy of Clinical (Preoperative) Diagnosis.—Correct clinical or preoperative recognition of the cause of the mass was made in 398 (87.5 per cent) of the cases studied. In only fifty-seven (12.5 per cent) of the cases was the postoperative diagnosis significantly different from the clinical or preoperative diagnosis. In most of the latter cases the preoperative diagnosis was simply mass in the right lower quadrant of the abdomen, and the operation was undertaken as an exploratory procedure. In seventeen of these cases, it would seem likely that complete preoperative study could have established the correct clinical diagnosis. However, in most such cases surgical treatment would have been indicated anyway. In these seventeen cases, the barium enema and excretory urography were the procedures most often omitted from the preoperative study. In twenty-seven cases, all appropriate diagnostic procedures were carried out but an accurate and definitive preoperative diagnosis was still not possible, usually because the results of the tests were not entirely diagnostic, being inconclusive or giving an indeterminate diagnosis. The pelvic examination accounted for twenty-two of these indeterminate examinations, urography for four, and the examination with barium enema for one. In thirteen cases (2.9 per cent), the cause of the mass was of such a nature that correct preoperative diagnosis was probably not possible or practical, these being the cases in which exploratory operation was necessary in order to establish a diagnosis.

Methods of Preoperative Diagnosis.—To investigate the value and reliability of various diagnostic measures in revealing the cause of a mass in the right lower quadrant each case record was studied to determine in so far as possible which tests were actually utilized and which gave helpful evidence pointing to the correct preoperative diagnosis. The methods of examination were then classified as (1) diagnostic procedures, that is, those examinations which resulted in positive identification of the causative lesion, or (2) contributory procedures, that is, those tests or examinations which, while not diagnostic in themselves, gave evidence which contributed to the establishment of the correct diagnosis. In 226 cases (49.7 per cent) a single diagnostic procedure resulted in the correct identification of the causative lesion while in the remaining 229 cases (50.3 per cent) the correct diagnosis depended on collection and evaluation of the results of a number of tests and examinations, none being diagnostic but each contributing helpful evidence.

Roentgenographic examination of the colon by means of a barium enema revealed the correct cause of the mass in ninety patients, while urographic roentgenography resulted in identification of the cause of the mass in forty-nine cases and bimanual pelvic examination resulted in recognition of the cause in forty-three cases. Other diagnostic procedures resulting in positive identification of the cause of the mass in smaller numbers of cases included roentgenologic examination of the upper part of the gastro-intestinal tract, various bacteriologic smears and cultures, digital rectal examination, physical examination of the mass itself, cystoscopy, physical sigmoidoscopy, cleansing enema, cholecystography, urethral catheterization and roentgenography of the bony pelvis.

The medical history of the present illness was the most useful contributory diagnostic procedure, being an important factor in preoperative recognition of the cause of the mass in 352 (77.4 per cent) of the patients studied. The general physical examination was helpful in 330 cases (72.5 per cent) and examination of the mass itself in 268 cases (58.9 per cent). The pelvic and rectal examinations were often helpful, and the past medical history not infrequently yielded important diagnostic evidence.

Management of the Patient.—Three hundred and ten (68.1 per cent) of the patients with a mass in the right lower quadrant underwent surgical treatment for this lesion while the other 145 patients (31.9 per cent) were managed medically. Definitive surgical treatment, aimed at cure of the patient, was undertaken in 228 patients (50.1 per cent of those with a mass and 73.6 per cent of those who underwent operation). Definitive medical treatment was given in forty-eight patients (10.5 per cent of all patients studied and 33.1 per cent of those not operated on). Palliative surgical procedures were carried out in thirty-eight patients (8.4 per cent of all patients with a mass and 12.3 per cent of the patients undergoing operation), and medical palliation was utilized in the management of fifty-two patients (11.4 per cent of all patients studied and 35.9 per cent of those managed medically). No treatment was undertaken in forty-five patients with nonsurgical lesions and in forty-four patients who underwent exploratory operation.

The nature of the operation finally performed on the 124 patients for whom only an exploratory procedure was scheduled seemed especially significant. It should be pointed out that in most of these patients the cause of the mass was recognized preoperatively, the operation being listed as an exploratory procedure because the operability of the lesion was not known. In approximately a third of the 124 exploratory operations definitive therapy was carried out, in a third palliative procedures were done, and in a third the surgical exploration resulted in establishment of the diagnosis only, no surgical therapy being attempted.

Comment

Causative Lesions.—The surprisingly high incidence of uterine fibromyoma and cystic lesions of the ovary as causes of masses in the right lower quadrant of the abdomen most certainly is related to the common occurrence of these lesions rather than to their location or abdominal palpability. While most uterine fibromyomas and ovarian cysts cause pelvic masses and are not palpable abdominally, these lesions are so common that the 2 to 3 per cent which are palpable in the right lower quadrant of the abdomen constitute a relatively high percentage of the masses which occur in this region.

Perhaps our most significant observation is the fact that masses in the right lower quadrant may be caused by many different disorders, the most common cause representing less than 15 per cent of the patients presenting a mass in this location. Seventy-four different disorders were found as causes for the 455 masses, and these lesions were located in twenty-one different anatomic structures. Such data emphasize the importance of objective, open-minded approach to the diagnostic study of a patient presenting a mass in the right lower quadrant. Such patients must not be categorized but each must be studied individually. Many possible causative disorders must be kept in mind and such diagnostic examinations must be carried out that even relatively uncommon lesions are routinely considered and ruled out as diagnostic possibilities. Certainly the diagnostic acumen of the examiner is heavily taxed in the study of a patient with such a mass.

Preoperative Diagnostic Accuracy.—Another important observation derived from the above data is the relatively high degree of accuracy with which the cause of a mass in the right lower quadrant of the abdomen can be determined clinically. This indicates that, commendable as it may be, the present-day contention of many physicians that "no mass is a good mass" and that every lump or swelling should be explored by biopsy or surgical exposure can hardly be condoned currently. Such an attitude not only encourages diagnostic laxity and fails to recognize or fully utilize modern diagnostic facilities but, more seriously, may result in ill-advised, useless surgical treatment which might have been avoided or modified had the surgeon been more energetic in the preoperative examination of his patient.

Thirty years ago a textbook[6] on diagnosis carried the statement that "diagnosis (of abdominal masses) is largely by exclusion, seldom direct . . ." and "the probable nature of the abdominal tumor is a matter of statistics." Twenty years ago an eminent surgeon[1] wrote: "As far as tumors are concerned, the abdomen is indeed a temple of surprise, and it is by our diagnostic humiliation when the abdomen is opened that we learn." These were accurate descriptions of diagnostic reliability when they were written, but fortunately they can now probably be revised. While it is unquestionably worth while, even essential, that we realize our diagnostic limitations, by the same token there is folly in failure to recognize and utilize refinements in technique or new procedures that overcome to some extent previously insurmountable obstacles to diagnostic accuracy. Whereas reliance on surgical exploration for diagnosis of most masses in the right lower quadrant of the abdomen was once necessary, preoperative direct and positive diagnoses of the causes of many such masses are now being made regularly by clinicians, roentgenologists and urologists who understand how and when to use modern diagnostic procedures, relatively few patients being submitted to operation for diagnostic purposes.

Furthermore, present-day methods of treatment of the causes of masses in the right lower quadrant of the abdomen require rather specific and accurate knowledge concerning the mass. Recognition of the organ in which the mass is located often suggests the most accessible route to the mass, either with medications or by surgical attack. Identification of the specific etiologic agent causing an inflammatory mass may dictate the chemotherapeutic or antibiotic agent which should be used to eradicate the infection. The value of surgical exploration and its safety are greatly enhanced if the intimate relationship of the mass to the bowel is recognized preoperatively and effective preparation of the colon has been carried out, enabling the surgeon to open, resect or anastomose bowel without danger of peritonitis. Recognition that a mass in the right lower quadrant is without doubt retroperitoneal and is approachable through an extraperitoneal lumbar incision may offer the patient an operation with half the mortality that is commonly associated with the transperitoneal abdominal exploration of a retroperitoneal mass which would most likely be utilized if the location of the mass had not been recognized preoperatively.

Thus, current standards of medical practice would seem to indicate that, except under unusual circumstances, a simple diagnosis of "mass in the right lower quadrant of the abdomen" should not be considered adequate basis on which to recommend specific therapy or offer a prognosis, much less to advise or undertake surgical intervention, at least until the patient has been carefully examined by modern diagnostic methods in attempts to gain as much information as possible about the mass. Such a conclusion has recently been expressed by Engel.

Methods of Examination.—The data concerning the value of various diagnostic measures in determining the cause of a mass in the right lower quadrant admittedly are not entirely objective and represent only a crude attempt to show statistically a problem of interpretation. However, the point seems adequately demonstrated that such examinations as roentgenography of the colon with barium enema, excretory urography, and careful bimanual pelvic examination should be carried out preoperatively on every patient with a mass in the right lower quadrant, the cause of which has not been accurately identified. The overwhelming number of patients who have a mass in the right lower quadrant and whose clinical history, general physical examination, and examination of the mass itself have contributed importantly toward establishment of the correct preoperative diagnosis should be ample evidence of the necessity for careful and painstaking consideration of these diagnostic procedures for every patient with such a lesion.

Management.—Since only about two thirds of the masses studied were handled surgically it would seem unwise to assume that every patient with such a lesion needs an operation. The disappointing results of exploratory operations for a mass in the right lower quadrant of the abdomen (that is, only one in three patients is materially benefited from the operation) is strong evidence that accurate preoperative clinical diagnosis should be striven for diligently before surgical exploration is recommended.

Summary and Conclusions

Data derived from the records of 455 patients with a palpable mass in the right lower quadrant of the abdomen would seem to justify the following conclusions:

1. Masses at this site may be caused by a wide variety of lesions located in any of twenty or more anatomic structures. The four most common causative lesions, accounting for about 60 per cent of the masses studied were those of the uterus, the right ovary, the right kidney, and the cecum and ascending colon. Neoplasms were accountable for most of the masses in these organs. The remaining 40 per cent of the masses were caused by seventy different types of lesions, each of which occurred in less than 5 per cent of the patients with right lower quadrant masses.

2. An accurate clinical (preoperative) diagnosis of the cause of such a mass should be conscientiously attempted in every instance, and it probably can be established in from 85 to 90 per cent of the patients who are thoroughly studied.

3. Diagnostic methods and procedures most often giving the direct and positive clinical diag-

(Continued on Page 491)

ANALYSIS OF TUBERCULOSIS CASE REGISTERS IN MINNESOTA

D. S. FLEMING, M.D., M.P.H.
Minneapolis, Minnesota

IN RECENT years, mortality figures for tuberculosis have given a distorted picture of the problem of this disease in Minnesota, leading to an overly optimistic impression that tuberculosis no longer is a serious burden. On the other hand, figures of new cases reported each year, while indicating no marked drop comparable to reductions in deaths, have not been adequate to picture the continuing load of tuberculosis victims that accumulate over the years. Since tuberculosis is a chronic disease, subject to reactivation and breakdown over long periods of time, other measurements than annual case and death rates are required to indicate the problem.

Such measurements are available in Minnesota from reports submitted to the State Health Department by a number of health agencies which operate case registers as a means of providing health supervision of all known cases of tuberculosis within their jurisdictions.

The State Health Department maintains a Central Case Record System consisting of a master index of all reported tuberculosis cases and deaths in Minnesota together with a current file of all administratively active cases, and a closed file of all cases considered administratively inactive. This system functions with local case registers through the medium of information interchange.

The local case registers presently functioning in Minnesota include that of the Minneapolis Health Department for cases in Minneapolis City; the register of the St. Paul Bureau of Health for cases in St. Paul City; and the register of Nopeming Sanatorium for cases in St. Louis County, including Duluth City. The State Health Department is attempting to decentralize its tuberculosis records system by setting up a case register in each of the Department's eight District offices to cover

ANALYSIS OF TUBERCULOSIS CASE REGISTERS

December 31, 1952

I. Numbers of cases in current register

	Minneapolis City	St. Paul City	St. Louis County	Rest of State	Total
Pulmonary	1,677	1,339	2,440	5,531	10,969
Primary Active	16	19	3	57	95
Extra Pulmonary	147	69	171	418	805
Suspected	565	168	35	158	926
Total	2,405	1,595	2,649	6,146	12,795

II. Total pulmonary cases by stage in white persons fifteen years of age or older

	Minneapolis City	St. Paul City	St. Louis County	Rest of State	Total
Minimal	515	575	1,025	1,534	3,649
Moderately Advanced	511	414	809	1,710	3,444
Far Advanced	372	234	466	836	1,908
Not Specified	168	47	86	911	1,212
Total	1,566	1,270	2,386	4,991	10,213

III. Total pulmonary cases by stage in non-white persons, fifteen years of age and older

	Minneapolis City	St. Paul City	St. Louis County	Rest of State	Total
Minimal	27	30	22	201	280
Moderately Advanced	38	9	15	99	161
Far Advanced	25	9	15	83	132
Not Specified	7	4	0	116	127
Total	97	52	52	499	700

IV. Total pulmonary cases in white persons—zero to fourteen years of age........................... 34

V. Total pulmonary cases in non-white persons—zero to fourteen years of age.................... 22

Dr. Fleming is Director, Division of Disease Prevention and Control, Minnesota Department of Health.

VI. Total pulmonary cases by clinical status according to NTA 1950 terminology

	Minneapolis City	St. Paul City	St. Louis County	Rest of State	Total
Arrested	1,013	596	10	1,270	*2,382
Active	408	275	168	1,175	2,026
Inactive		381	2,220	1,596	**3,704
Activity undetermined	256	87	42	1,472	1,857
Not stated		0	0	0	0
Total	1,677	1,339	2,440	5,513	10,969

*Includes 506 of Minneapolis cases.
**Includes 507 of Minneapolis cases.

VII. Total primary active cases, zero to fourteen years of age, by color

	Minneapolis City	St. Paul City	St. Louis County	Rest of State	Total
White	2	16	2	12	32
Non-white	0	3	0	40	43
Total	2	19	2	52	75

VIII. Total primary active cases, fifteen years and over, by color

	Minneapolis City	St. Paul City	St. Louis County	Rest of State	Total
White	12	0	1	3	16
Non-white	2	0	0	2	4
Total	14	0	1	5	20

IX. Hospitalization status of total cases in current register

	Minneapolis City	St. Paul City	St. Louis County	Rest of State	Total
In Hospital & Sans.	442	261	156	2,149	3,008
At home	1,963	1,334	2,447	3,997	9,741
In other places	0	0	46	0	46
Total	2,405	1,595	2,649	6,146	12,795

X. Hospitalization status of total clinically active cases

	Minneapolis City	St. Paul City	St. Louis County	Rest of State	Total
In Hospitals & Sans.	315	253	152	937	1,657
At home	134	70	23	377	604
In other places	0	0	14	0	14
Total	449	323	189	1,314	2,275

XI. Hospitalization status of total cases classified other than clinically active

	Minneapolis City	St. Paul City	St. Louis County	Rest of State	Total
In Hospital & Sans.	127	8	4	1,212	1,351
At home	1,829	1,264	2,424	3,620	9,137
In other places	0	0	32	0	32
Total	1,956	1,272	2,460	4,832	10,520

the counties making up each District. At present three such district registers are operating. The Department in addition maintains separate registers for Indian cases, and cases in state institutions.

Information about a case varies in completeness in different registers, dependent somewhat on the purpose of the register. In general, however, each case record includes such basic data as name, age, sex, address, the type of tuberculosis diagnosed such as pulmonary or non-pulmonary, the extent of the lesion, the clinical status whether active, arrested, or inactive, and the hospitalization status.

By analyzing the registers described above, it is possible to assemble on a statewide basis much valuable information regarding the total load of cases of tuberculosis. Such analysis has been made on three occasions, at six-month intervals, as of

(Continued on Page 499)

OBSCURE FEVER OF HYPERNEPHROMA

LYLE V. KRAGH, M.D., HAROLD H. JOFFE, M.D., ARTHUR H. WELLS, M.D.,
and RALPH J. ECKMAN, M.D.
Duluth, Minnesota

IT IS our purpose first, to report a case of proven hypernephroma in which the only outstanding sign and symptom was fever, and secondly, to review the cases of hypernephroma at this institution from 1936 through 1952.

Case History

This forty-two-year-old displaced person, spontaneously delivered her second child on March 21, 1952. The puerperium was complicated by a persistent afternoon fever as high as 100.8 degrees. The physical examination was negative. A heterophile antibody test, urinalyses, urine smears and cultures were likewise negative. The red blood cell count varied from 3,240,000 to 4,080,000 with 10.5 grams of hemoglobin. The white blood cell count varied from 9,250 to 11,200 with 88 per cent neutrophils. A chest plate revealed bilateral apical fibrocalcific scarring. The patient left the hospital against advice before an adequate evaluation as to the cause of the fever could be accomplished.

The patient was readmitted on May 22, 1952, with complaints of fever, weakness and loss of appetite. A history of vaginal bleeding for about five days after her last discharge from the hospital was obtained. This ceased spontaneously. There was no history of abnormal menses. The patient continued to have an afternoon elevation of temperature during this hospitalization, averaging around 100.4 degrees, associated with sweats. Physical and pelvic examination revealed nothing of note. Urinalyses were normal. The red blood cell count varied from 3,200,000 to 3,610,00 with 8.8. to 9.1 grams of hemoglobin. The white blood cell count ranged from 6,250 to 10,800 with 74 to 83 per cent neutrophils. The red cell sedimentation rate was 126 mm. per hour. Several examinations of the stools revealed no occult blood, ova or parasites. Urine smears and cultures were negative, for pathogenic bacteria, including acid-fast organisms. Six blood cultures and a Kline test were also negative. Sputum concentrates and gastric cultures failed to reveal acid-fast bacteria. The Mantoux test was three plus. The blood urea nitrogen and sugar were normal. The icterus index was 10.2 units but three different liver flocculation tests were negative. No malaria parasites were found. Agglutination test for melitensis, typhosus and tularensis were negative. A repeat heterophile antibody test was negative and bone-marrow examination revealed some increased erythroid activity. A repeat chest plate when compared to the previous film and one taken at the displaced person's camp, revealed no change. The fever did not subside on penicillin therapy and the patient was transferred to a nearby sanatorium for further evaluation as to the activity of the bilateral apical scarring.

At the sanatorium, a repeat pelvic and bone marrow examination were negative. A frog-test for a post-patrum malignancy was likewise negative. The sputa, gastrics and urine were negative for tubercle bacilli on culture and guinea pig inoculation. Several repeat blood cultures revealed no growth.. The red blood cell count was 3,020,000 with 8.2 grams of hemoglobin. The white blood cell count was 12,950 with 85 per cent neutrophils and the red cell sedimentation rate was still elevated at 107 mm. per hour. In spite of no radiologic or laboratory evidence of tuberculous activity, the patient received both streptomycin and para-amino-salicylic acid. The daily fever continued, varying from 99 to 102 degrees. An x-ray of the pelvis, lumbar spine, upper gastrointestinal series and barium enema revealed no abnormalities. An intravenous pyelogram on July 28, 1952, revealed a peculiar shadow on the right side which could not be accurately evaluated because of overlying gas-filled bowel. A retrograde pyelo-uretogram was planned but the patient refused to remain in the sanatorium any longer.

The last admission was on September 9, 1952, and the patient was still running a fever. Further extensive laboratory and radiologic studies were negative except for the probable presence of a retroperitoneal mass on a repeat retrograde pyelogram.. An exploratory laparotomy on September 18, 1952, revealed a tumor of the lower pole of the right kidney and a nephrectomy was done.

The 8 cm. in diameter nodular tumor was friable and yellow with areas of cystic degeneration and hemorrhage. The renal vein was not invaded. Microscopically, it was made up of large polyhedral cells with clear vacuolated cytoplasm, typical of adenocarcinoma of the kidney. On the first postoperative day her temperature dropped to normal for the first time in six months and remained normal until her discharge from the hospital on September 25, 1952.

Tumors of the kidney, like syphilis and tuberculosis, are the great mimics in medicine and produce the clinical picture of a variety of diseases.[5] The diversity of symptoms have been attributed to: (1) pressure on adjacent structures; (2) necrosis or hemorrhage in the neoplastic tissue; (3) local extension or metastases and (4) absorption of toxic products.[10,16]

At this institution a total of forty-two cases of adenocarcinoma of the so-called hypernephroma type were diagnosed either by surgical specimens or necropsy examinations in the period from 1936

From the Department of Pathology, Saint Luke's Hospital and Nopeming Sanatorium, Duluth, Minnesota.

TABLE I. SEX INCIDENCE

Sex	Number	Age Range	Average Age
Male	18	39-73	60.4
Female	17	37-84	60

TABLE II. SYMPTOMS

Sympton	Number	Percentage
Hematuria	18	51.4
Palpable mass	7	20.0
Back pain	2	5.7
Chest pain	2	5.7
Bilateral strabismus	1	2.8
Skeletal fracture	1	2.8
Anemia	1	2.8
Shoulder pain	1	2.8
Cough	1	2.8
Fever	1	2.8

through 1952. Seven of the cases were considered incidental to more important necropsy findings. The sex ratio and age of the thirty-five cases is shown in Table I. There was no statistical difference as to which kidney was involved. All of the thirteen necropsy cases had generalized metastases. In the remainder of twenty-two surgical cases, the renal vein was invaded in only five instances with three of these cases coming to necropsy after an average of two years.

The usual symptoms of hematuria, palpable mass and pain is a familiar triad.[2,6,20] In a combined series of 230 cases[2,20] hematuria was present in 79 per cent; palpable tumor in 53.5 per cent and pain in 43.9 per cent. In our series of thirty-five cases, hematuria occurred in 51.4 per cent; palpable tumor in 20 per cent and lumbar or back pain in 11.4 per cent of the cases (Table II).

The occurrence of fever in the course of malignant disease or as a result of an infectious complication has long been known.[1,4,7,8,11,16,20,21] The incidence of fever as a prominent symptom with one or more of the classical findings varies from 1.25 to slightly over a 11 per cent.[4,6,16,17] There was no case in a combined series of 364 cases[2,8,17,20] in which fever was the sole prominent finding. In our present review of the literature only sixteen cases could be found in which fever was the sole presenting symptom.[3,4,9,10,15,16,18,19,21]

The hypernephroma type of adenocarcinoma of the kidney tends to grow slowly and the classical symptoms of hematuria, palpable mass and pain, may be late manifestation.[5,10] The first symptom may frequently be due to metastases.[5,10,13] In a review of ninety-two clinical and necropsy cases, the first symptom was due to either metastases or local extension in 41 per cent of the cases.[5] In our series, the first symptom was due to metastases in six cases with pleural effusion in three; shoulder pain; bilateral strabismus and spontaneous fracture in one case each, for an overall percentage of 17.1.

The diagnosis of renal carcinoma with fever as the sole presenting symptom is difficult and often missed because these tumors frequently produce no defect of either the pelvis or calyces. These tumors have a tendency to grow laterally and the only pyelographic change may be a displacement or an increase in the kidney size.[7]

The possibility of a hypernephroma should be kept in mind in any case of obscure fever. If the fever does not subside after nephrectomy, metastases should be suspected.[16]

Summary

1. A case of unexplained fever of six months' duration is reported in which a nephrectomy for adenocarcinoma of the kidney was followed by a return of the temperature to normal.

2. In our series of thirty-five cases, hematuria occurred in 51.4 per cent; palpable mass in 20 per cent and either back or chest pain in 11.4 per cent.

3. The first presenting symptoms on the basis of metastases occurred in 17.1 per cent of the cases.

References

1. Briggs, L. H.: The occurence of fever in malignant disease. Am. J. M. Sc., 166:846-855 (Dec.) 1923.
2. Cahill, G. F.: Cancer of the kidneys, adrenals and testes. J.A.M.A., 138:357-362 (Oct. 2) 1948 and 138:415-425 (Oct. 9) 1948.
3. Catlin, C. H.; Bintcliffe, E. W., and Marson, F. G.: Pyrexia with hypernephroma. Lancet, 2:170-171 (Aug. 2) 1947.
4. Creevy, C. D.: Pyrexia in malignant nephroma. J.A.M.A., 92:256-1260 (Apr. 13) 1929.
5. Creevy, C. D.: Confusing clinical manifestations of malignant renal neoplasms. Arch. Int. Med., 55:895-916 (June) 1935.
6. Dick, V. S., and Flint, L. U.: Prognosis of renal tumors. S. Clin. North America, 31:633-643 (June) 1951.
7. Greenberg, D.; Ney, C., and Feibush, J. S.: Obscure fever caused by carcinoma of the kidney. Arch. Int. Med., 90:395-401 (Sept.) 1952.
8. Hale, N. G., and Burkland, C. E.: Unrecognized renal tumors. J. Urol., 49:426-431 (Mar.) 1943.
9. Haman, L., and Wainwright, C. W.: The diagnosis of obscure fever. Bull. Johns Hopkins Hosp., 58:307-337, 1936.

(Continued on Page 495)

Laboratory Aids to Medical Practice

Sponsored by
The Minnesota Society of Clinical Pathologists

A RAY OF HOPE FOR A CHANGE

JAMES S. MC CARTNEY, M.D.
Department of Pathology, University of Minnesota Medical School
Minneapolis, Minnesota

MINNESOTA needs a change from its archaic coroner system to a modern plan for the investigation of deaths that presently do or should come under the jurisdiction of the coroner. That this is so was ably set forth by Victor Cohn and Charles W. Bailey in their recent series of articles entitled "Hidden Murder," in the *Minneapolis Morning Tribune*.

For many decades Minnesota has had as coroners persons who are elected for a short term of office. To qualify for the office of coroner one needs no background or foundation in medicine, and no training in such procedures as investigation of death, gathering of evidence, identification, photography, chemistry or toxicology, but only the necessary filing fee and the carrying on of a more or less vigorous election campaign.

Consequently, the roster of coroners in the eighty-seven counties of Minnesota is made up of individuals from all walks of life who represent a great many different occupations. A survey shows that about half the coroners are physicians. Inquiry will reveal that most of these physicians are coroners not because they want the job but actually because of a sense of civic duty.

While, of necessity, physicians have training in disease, few have more than a little training in pathology and most of them no training in forensic or legal medicine. Most of them try to do a good job as coroner but must necessarily work under a great handicap because of the demands of the practice of medicine. Surely the fee of $10.00 per day for investigating a death is hardly an inducement to undertake the job. The coroner or his deputy must be available twenty-four hours a day the year around, as fatal accidents, murders and violent deaths occur at all hours. That no valuable clue may be lost, destroyed or overlooked requires investigation of the scene without delay. A physician-coroner is not always immediately available.

A busy practitioner does not have the time to acquire the collateral information and training he needs to discharge fully his duties. If the physician-coroner is lacking in training in the various phases of forensic medicine, how much greater is the handicap of the coroner who has no scientific training whatsoever?

It is in recent sudden or violent death that the trained investigator has the best chance to gather pertinent and important evidence. But if the body and the place of death have been disturbed by ignorant or careless persons, be they officials of the law or curiosity seekers, then the problem of gathering evidence to solve the problem is made enormously more difficult. It may be impossible to obtain truthful photographs, measurements by triangulation or fingerprints, all of which may be of extreme importance. The innocent may be accused wrongfully, the guilty may escape or a dependent family may lose insurance benefits.

It is in deaths that have occurred a long time before discovery, particularly when decomposition has taken place or attempts have been made to cover up a crime or destroy evidence, that the investigator is really put on his mettle to reconstruct the circumstances and to determine the means and cause of death. At such times the responsible official needs to have at his command such experts in many different fields as skilled pathologists, photographers, roentgenologists, toxicologists, immunologists, botanists or anthropologists, not to mention experts in obtaining latent fingerprints and experts in ballistics and fabrics.

Obviously such experts are not available in every county in Minnesota. If, however, a statewide medical-examiner system could be set up, it would be possible to develop machinery so that an early, if not an immediate, investigation could be made. Undoubtedly many unsuspected violent deaths would be found. Exact causes of death could be determined and guesswork to a considerable degree eliminated. On a state-wide basis such a system would probably cost less than the present inefficient coroner system.

For a long time many physicians have been aware that the present coroner system is anything but satisfactory. A committee dealing with this subject has been in existence for many years. This committee of the Minnesota State Medical Association has done a great deal of work on this subject, gathering information on laws in other states and determining how the medical-examiner system has worked out where it has been established. Not long ago Dr. C. E. Proshek, the chairman, called a meeting of the committee and invited representatives of the legal profession, the sheriffs, the Minnesota State Board of Health, the pathologists, the insurance companies and the legislature to talk over this problem.

It now appears, according to a recent item in the *Minneapolis Star*, that an interim commission of the legislature has been proposed to study the question of the medical-examiner system versus the coroner system.

This is indeed a ray of hope that we may now be on the way to replacement of the worn-out coroner system with a medical-examiner system in the best sense of the word, namely a medical examiner appointed because of ability and training and with indefinite tenure.

This is the fifth in a series of editorial reports sponsored by the Minnesota Society of Clinical Pathologists and designed to emphasize ways in which laboratory methods may aid in the practice of medicine. The editorial committee of the society is glad to present this timely comment from Dr. McCartney, who is one of the leaders in the movement to bring up to date the investigation of sudden death in Minnesota.

Wherever communities have replaced the old-fashioned coroner system with the modern scientific methods incorporated in a medical-examiner system, the benefits accruing to such communities have been undeniable. Pathologists are proud of the part they play in the detection of crime and in the solution of problems concerned with sudden death. The time has come for Minnesota to discard the outmoded coroner system, under which you can get away with murder.

This presentation again emphasizes the multifaceted character of the modern laboratory physician. Practicing physicians are urged to utilize more extensively the services of their colleagues in pathology. The editorial committee, consisting of Dr. Arthur H. Wells of Duluth and Drs. Arthur H. Sanford and George G. Stilwell of Rochester, welcomes comments and suggestions regarding this series of reports.

George G. Stilwell, M.D.,
Chairman, Editorial Committee

Mayo Clinic,
Rochester, Minn.

A STUDY OF MASSES IN THE RIGHT LOWER QUADRANT OF THE ABDOMEN

(Continued from Page 485)

nosis of the cause of such a mass are roentgenography of the colon with barium enema, urographic roentgenography, bimanual pelvic examination, and careful physical examination of the mass itself. However, the diagnosis can be established in only about half the cases by one of these direct diagnostic procedures, making it necessary in an equal number of patients to evaluate carefully the findings and results of a battery of routine tests and examinations, each contributing evidence but not being diagnostic in itself. The most useful of these contributory diagnostic measures are the history of the present illness, the general physical examination, the examination of the mass itself, bimanual pelvic examination, rectal examination, and inquiry into the past medical history.

4. While surgical treatment is indicated in about two thirds of patients with a mass in the right lower quadrant of the abdomen, clinically diagnosable nonsurgical lesions cause such a mass commonly enough that routine surgical exploration without thorough preoperative attempts at diagnosis must be decried as unsound and not commensurate with the highest standards of modern medical practice.

References

1. Bailey, Hamilton: Demonstrations of Physical Signs in Clinical Surgery. Ed. 2. pp. 121-126. New York: William Wood and Company, 1930.
2. Butler, D. B., and Bargen, J. A.: Abdominal masses. I. A survey of their incidence and clinical significance. Gastroenterology, 19:1-12 (Sept.) 1951.
3. Donnelly, B. A.: Primary retroperitoneal tumors. Surg., Gynec. & Obst., 83:705-717 (Dec.), 1946.
4. Engel, W. J.: Urologic investigation of abdominal masses. S. Clin. North America, 28:1193-1208 (Oct.) 1948.
5. Fell, E. H.: Intra-abdominal masses in children. (Abstr.) Proc. Inst. Med. Chicago, 17:165-166 (Oct. 15) 1948.
6. Foster, N. B.: The Examination of Patients. pp. 124-127. Philadelphia: W. B. Saunders Company, 1923.
7. Muschat, M., and Edeiken, L.: Renal displacement. Surg., Gynec. & Obst., 71:146-150 (Aug.) 1940.

President's Letter

THE DELEGATES DECIDE

A virtual about-face was made by the House of Delegates of the American Medical Association on March 14.

Meeting in special session in Washington, D. C., to act on President Eisenhower's Reorganization Plan No. 1, the delegates committed the American Medical Association to official support of the new Department of Health, Education and Welfare. The delegates were honored to hear President Eisenhower, Senator Taft, and Congressman Walter Judd, who spoke in favor of the plan.

But support was not immediate, nor did it come easily. The delegates undoubtedly remembered the Association's long stand for a separate department of health, with a doctor of medicine at its head. But after many deliberations, some of them heated, a decision was made to accept the reorganization plan, with reservations.

The plan itself transfers all former activities of the Federal Security Administration to the new department, elevating the secretary to cabinet status. The secretary will have a Special Assistant for Health and Medical Care who will be a doctor of medicine with no previous governmental experience, but with wide experience in the field of medicine.

Granting that the plan was not what the delegates originally wanted, the general feeling was that it is a step in the right direction, that it is basically a good plan—that with proper support and co-operaion, it will work well.

The reservation made by the House was this: "the Association reserves the right to make recommendations for amendment of the then existing law or to press for the establishment of an independent Department of Health, if the present plan does not, after a sufficient length of time for development, result in proper advancement in and protection of health and medical science and in their freedom from political control."

Dr. Louis H. Bauer, president of the American Medical Association, makes this conclusion: "I believe (the resolution) was a wise decision, in view of all the aspects of the situation . . . we shall be embarking on a new sea of adventure, and I believe the medical profession of the United States can wield a constructive influence on the health of the American people. I am sure that we shall have every possible co-operation from Washington. The address of the President of the United States to the House of Delegates certainly assured us of that."

President, Minnesota State Medical Association

Editorial

Carl B. Drake, M.D., *Editor;* **George Earl, M.D.**, **Henry L. Ulrich, M.D.**, *Associate Editors*

POLIO CULTURE

OF CONSIDERABLE local interest should be the research conducted at the University of Minnesota by Drs. Jerome T. Syverton and William F. Scherer. Associated in this investigative work in connection with poliomyelitis and supported by the March of Dimes has been Dr. George O. Gey of the Department of Surgery of Johns Hopkins University. They have shown that cultures of the polio virus can be isolated from blood or stool of infected individuals by employing a medium of human cells in tissue culture.

The cells found by these investigators to be well suited as a culture medium for this virus were obtained from a human carcinoma of the cervix removed at the Johns Hopkins Hospital in 1951 and propagated in serial test tube cultures since that time. The polio virus grows rapidly in this cellular medium. Within 72 hours the amount of polio virus has increased about a million times. The investigators have been searching for a non-nervous tissue for continuous cultivation since 1949. The present stable strain of human cell promises to provide a culture medium for practical use in the fight to control poliomyelitis.

This cancer cell tissue apparently can be kept growing indefinitely in serial test-tube cultures. Since the cells quickly reveal characteristic damage from infection by the polio virus, they can be used as an index of virus growth. So hardy are these cancer cells in culture that the tubes containing cells can be shipped long distances without losing their value for culture growth. In addition to the use of this medium for detecting polio infection it may be used to determine an individual's immunity to any of the three types of polio.

AMERICAN FEDERATION OF MEDICAL CENTERS

RECENTLY a proposal was made by Dr. Edgar H. Norris to revolutionize the provision of medical care in this country by enlisting the assistance of businessmen in establishing central clinics in centers of population (more than one in the larger cities), to provide medical care of a standardized type through insurance.

Dr. Edgar H. Norris was a graduate of the University of Minnesota Medical School in 1919, and was associated with Dr. Arnold Schwyzer of Saint Paul in the practice of surgery from 1919 to 1922, when he formed a partnership with the late Dr. Frederick H. Neher. In 1924, he established his own medical group and practiced until 1930, when he became ill and moved to Mexico to spend some five years in recuperation. During this period he is said to have developed his plans to revolutionize the provision of medical care in America. In 1935, he was a fellow in Pathology at the University of Minnesota Medical School and in 1938, was made Professor of Pathology at Wayne University College of Medicine at Detroit. In 1945, he became a Research Associate at Massachusetts General Hospital in Boston as an associate of Dr. Tracy B. Mallory. He now lives in Detroit and has founded the American Federation of Medical Centers Plan for supplying complete medical, hospital, surgical, and dental care at low cost to individuals on a voluntary prepaid basis.

Not having access to Dr. Norris' book,* we did not feel qualified to pass judgment on his ideas. We were more than a little interested however to read Dr. Frank G. Dickinson's critical analysis** of Dr. Norris' book which appeared in the *Journal of the American Medical Association* of Februray 7, 1953. Dr. Dickinson has a Ph.D. degree and is Director of the Bureau of Medical Economic Research of the American Medical Association and his opinions merit consideration.

In brief, Dr. Norris' scheme is to give businessmen a large degree of control over medical care in order, in his opinion, to make that care more efficient. Medical care is to be provided by a single institution in each community in which two-thirds of the doctors are to be general practitioners and one-third specialists. Competition between physicians is to be eliminated. He wants to scrap the present system of private practice and substitute a form of panel practice with restrictions on the patient's free choice of physicians, the cost to be met by an insurance payment of $100 per family. The scheme envisions all the doctors voluntarily joining groups to take part in a standardized type of practice and be paid by insurance companies.

---

*Norris, E. H.: Medicine Rededicated, Health by Community Enterprise. Detroit: American Federation of Medical Centers (limited private printings).

**Dickinson, Frank G.: The Norris panacea. J.A.M.A., 151:511 (Feb. 7) 1953.

As the title of Dr. Norris' book—Medicine Rededicated—infers, his scheme is intended to bring the millenium and solve all problems of medical care in our country. He infers that medical care today is a hodge podge of inefficiency and he does not give due consideration to the great progress that has been made in the past thirty years particularly in the provision of medical care in our country.

We agree with Dr. Dickinson that medical care cannot be furnished as other commodities and furnished by big businessmen but that personality as well as skill is still a valuable component of medical service. We agree that the profession would not voluntarily adopt Dr. Norris' plan of practice and that governmental authority and dictation would be necessary to accomplish such a revolution. While we admit there is room for improvement in the provision of medical care we believe that this will be accomplished better by evolution than by revolution.

CHEMOTHERAPY IN TUBERCULOSIS

ONE YEAR ago reference was made in these columns* to a new antituberculosis drug, isonicotinic acid hydrazide, which had been given considerable publicity in the lay press. This had followed the premature publication in the New York newspapers of investigational work then being carried on at the Seaview Hospital and for which claims of some rather miraculous cures were being made.

Because of these exaggerated claims, most physicians interested in tuberculosis were skeptical and reluctant to accept the drug as having as favorable an effect as the previously well-tested streptomycin. This skepticism was enhanced by the subsequent observations that in the first few months of treatment, patients receiving streptomycin were showing more objective evidence of improvement than were those receiving isonicotinic acid hydrazide.

As is usual in the case of new drugs, the truth lies apparently somewhere in between the two extremes. Later observations on patients receiving isonicotinic acid hydrazide reveal that after approximately four months' treatment there is little to choose between the two drugs. This also points to the fact that both drugs are being given over much longer periods than was common in the beginning, courses of twelve months or longer not being uncommon.

In order to accomplish these longer courses, it is of course necessary to combine both streptomycin and isonicotinic acid hydrazide with paraminosalicylic acid or with each other in order to delay the emergence of resistant strains of tubercle bacilli. With the present dosage schedules, this resistance factor seems to be the most important consideration at the present time, as evidence of toxicity, fortunately, is rather uncommon.

As with all other forms of treatment for tuberculosis, it has again been shown that there is no sure-fire cure. This is not to say that these chemotherapeutic agents are without value. In fact, streptomycin and isonicotinic acid hydrazide are extremely helpful. All of us are very much impressed by the almost unbelievable improvement noted in some patients receiving these drugs, patients who a few years ago would have most certainly died. In addition, we are also impressed by the amount and type of surgery which may now be done on tuberculous patients under the protection of these drugs.

However, the use of these drugs—valuable as they are—belongs in a well-integrated plan of treatment including rest, surgery and the other time-tested forms of therapy. They should be used in a sanatorium where the proper studies on resistance and toxicity may be made, and the patient properly evaluated. Eradication of tuberculosis may not occur for many years to come, but we can most certainly advance toward this goal if we use the tools at hand in the most efficient manner.

G.C.R.

---

*New anti-tuberculous drugs. Minn. Med., 35:436 (May) 1952.

THE DISTRIBUTION OF GAMMA GLOBULIN

WITH the approach of the poliomyelitis season, physicians will receive inquiries as to the value of gamma globulin in the prevention of poliomyelitis and who should receive it.

The profession has been recently circularized by the Minnesota Department of Health to the effect that gamma globulin has been made available through the combined efforts of the Red Cross and National Foundation for Infantile Paralysis but that its distribution is to be made through the State Department of Health. The method of distribution in Minnesota will be to inoculate contacts fifteen years of age or younger in households where poliomyelitis occurs and pregnant women of any age who are household contacts of a case during the three days prior to and the five days following the onset of the first symptoms of the disease. The physician will be able to obtain the needed gamma globulin by submitting the required data to the Minnesota Department of Health, Division of Disease Prevention and Control, on the University Campus, Minneapolis 14 (Telephone Gladstone 5973 or Prior 4574).

A statement by the Division of Medical Sciences of the National Research Council appears in part in this issue. It presents in some detail the problems involved in the control and prevention of poliomyelitis and is published for the information of the profession. It is obvious that the 15,000,000 children under the age of fifteen cannot be inoculated with the 1,000,000 doses of available gamma globulin.

As is evident, many inoculated children will develop polio, and unwarranted promises should not be made about the efficacy of gamma globulin. According to the reported series, however, there is a lower incidence of poliomyelitis in inoculated children than in control groups, which warrants the attempt to prevent or modify a comparative few poliomyelitis infections.

HAROFE HAIVRI

The Hebrew medical journal, Harofé Haivri, initiated by a group of Jewish physicians, made its appearance twenty-five years ago. The paucity of medical terms in the Hebrew language was a real handicap, and one of the principal objectives of the journal was to create a medical terminology in Hebrew.

The need for such a journal in Palestine was evident. Lists of new terms in Hebrew have appeared in each issue of the journal from the start, the new words having been contributed by those expert in Hebrew philology. In addition to new terms having been coined, old terms have been resurrected. The journal has served as a bridge between Jewish physicians in America and those in Palestine.

Thus the ancient Hebrew tongue has been adapted to the needs of modern medicine and the medical students in the Medical School of the Hebrew University in Jerusalem can take all of their courses in Hebrew.

MEDICAL SCHOOL FACULTY PUBLICATIONS

The Bulletin of the University of Minnesota Hospitals and the Minnesota Medical Foundation will contain a section listing Publications of the Medical School Faculty. The purpose of this listing is to keep the members of the faculty posted in regard to the publications of other faculty members. Faculty members are urged to transmit to Dr. Robert B. Howard, Director of the Department of Continuation Medical Education, 3330 Powell Hall, University of Minnesota, the titles, journal, volume, page number, and date, of medical articles when they appear.

OBSCURE FEVER OF HYPERNEPHROMA

(Continued from Page 489)

10. Hempstead, R. H.; and Priestly, J. T.: Fever as a dominant symptom of hypernephroma. Proc. Staff Meet., Mayo Clin., 27:67-70 (Jan. 30) 1952.
11. Herman, L., and Hayllar, B. L.: Neoplasms of the kidney. Pennsylvania M. J., 1092-1098 (July) 1949.
12. Hyman, A., and Leiter, H. E.: The association of hypernophroma with amyloidosis of the kidney. J. Urol., 56:303-309 (Sept.) 1946.
13. Judd, E. S., and Hand, J. R.: Hypernephroma. J. Urol., 22:10-21 (July) 1929.
14. Kretschmer, H. L.: Cancer of the kidney. Urol. & Cutan. Rev., 54:641-644 (Nov.) 1950.
15. Ljunggren, E.: Case of renal tumor with fever as the only symptom. Brit. J. Urol., 4:249-256 (Sept.) 1932.
16. McCague, E. J.: Fever as initial symptom of hypernephroid tumor of the kidney. Arch. Surg., 41:385-392 (Aug.) 1940.
17. Melicou, M. M.: Classification and pathological study based on 199 cases. J. Urol., 51:333-385 (Apr.) 1944.
18. Nicholson, D.: Fever with renal carcinoma. Ach. Path and Lab. Med., 3:393-399 (Mar.) 1927.
19. Rowlands, B. C.: Pyrexia as the sole presenting symptom of a hypernephroma. Brit. J. Urol., 23: 267-270 (Sept.) 1951.
20. Soloway, H. M.: Renal tumors; a review of one hundred and thirty cases. J. Urol., 40:477-490 (Oct.) 1938.
21. Zador, L.: Renal tumors and persistent fever. Lancet, 2:256-258 (Aug. 14) 1948.

Saint Luke's Hospital
915 E. First Street

Minnesota Department of Health

DISTRIBUTION AND USE OF GAMMA GLOBULIN

During the past few months, wide publicity has been given to the results of studies indicating that a fraction of human plasma, known as gamma globulin, has some value as a prophylactic agent for paralytic poliomyelitis. As a result of this publicity, an overwhelming demand for the material may be anticipated in the coming months. The purpose of the present document is to outline the steps that have been taken to meet this situation and to discuss briefly the principles on which current plans for the distribution of gamma globulin have been based.

The supply of gamma globulin is severely limited. It is estimated that the maximum amount available this summer will not exceed 10,000 liters. Even if this were all used for the prophylaxis of poliomyelitis in children, it would provide less than one and a half million average doses. Moreover, the dose would be large enough only to give protection for four to five weeks. How inadequate is this supply to meet the demand will be evident when it is recalled that there are some 40 million children in the United States under fifteen years of age.

The situation is even less favorable than these figures indicate. Gamma globulin contributes to the public health in ways other than in the prophylaxis of poliomyelitis. It is well established as a valuable agent in the control of measles and of infectious hepatitis. It is proving its effectiveness in the treatment of the rare condition of hypogammaglobulinemia. Provision must be made to reserve amounts of gamma globulin adequate to meet these needs. Furthermore, since gamma globulin is a product derived from human blood, consideration must be given to the requirements of military and civilian services for whole blood, plasma and albumin. To maintain a well-balanced National Blood Program, blood collected by the American National Red Cross must be wisely apportioned between these varied needs.

Shortly after the outbreak of the Korean War, it was recognized that the competing demands of several Government agencies for blood and the derivatives of blood might become acute. To assure an equitable distribution, the Office of Defense Mobilization was assigned the task of co-ordinating the National Blood Program. Late in 1952, the evidence for the value of gamma globulin in the prophylaxis of poliomyelitis was first published. Realizing that this new development would lead to an extreme demand for gamma globulin during the next poliomyelitis season, the Office of Defense Mobilization turned to the National Research Council for advice. In response, the Council appointed a panel of experts in public health services, epidemiology and poliomyelitis to study the problem. There was general agreement that the equitable and effective use of available supplies of gamma globulin could be achieved only by the adoption of a system of controlled distribution. In consultation with the foremost authorities on poliomyelitis, an allocation program was devised and submitted to the Office of Defense Mobilization. The recommendations of the panel were approved in principle by the Health Resources Advisory Committee, Office of Defense Mobilization, on April 15, 1953. The plan, in the form which has been communicated to all health authorities, is attached as an appendix to this agreement. The discussion that follows is a brief review of the nature of gamma globulin, the amounts that are expected to be available this summer and the criteria on which the effective use of the material should be based.

Gamma Globulin

Gamma globulin is the name given to one of several fractions of the protein component of human plasma. It is comparable with the product officially known as immune serum globulin. Gamma globulin is prepared commercially by a method involving a series of precipitations with varying concentrations of alcohol under controlled conditions of acidity and low temperature. An average donation of blood (500 cc.) yields 7 cc. of a 16 per cent solution of gamma globulin. This represents a single recommended dose for the prophylaxis of poliomyelitis in a 50-pound (6- to 7-year-old) child.

The production capacity of existing fractionating plants is limited.

Administration.—Gamma globulin is available as a 16 per cent solution. This solution is opalescent and somewhat viscous, necessitating injection through a No. 18 or 20 needle for quantities required for the prophylaxis of poliomyelitis. Injections should be made intramuscularly, using a separate syringe and needle for each subject. Gamma globulin should never be given by the intravenous route.

The use of separate syringes is recommended because of the danger of contamination of the syringe with blood containing the virus of homologous serum hepatitis. This may occur when one attempts to withdraw blood in order to be certain that the needle point is not in a vein. It is for this reason that the repeated use of the same syringe carries the hazard of the transmission of homologous serum jaundice. No instance of hepatitis has been recorded following the use of gamma globulin which has been prepared and administered in the manner described above.

The intramuscular injection of gamma globulin is not accompanied by any significant reactions. The danger of local or systemic reactions must, however, be considered if repeated injections are contemplated.

Measles

A dose of 0.1 cc. per pound body weight, when given soon after exposure, will prevent infection in most cases. When given later in the incubation period, this dose

---

A statement by the Division of Medical Sciences, National Research Council, April 20, 1953.

will result in modification of the disease. A dose of 0.02 cc. per pound body weight will usually modify the severity of the attack if given soon after exposure to infection.

In general, modification is to be preferred to prevention. Because of the seriousness of the disease in the younger age group, it is suggested that modification be attempted in all children below the age of three years who have been exposed to infection.

Prevention rather than modification may be warranted in hospital situations involving debilitated children and in individual cases where there is concurrent serious disease such as clinically active childhood tuberculosis.

The selection of exposed children rarely presents difficulties since the contact is almost always a frank clinical case and the time of exposure can frequently be determined. A history of a previous attack of measles should suffice to distinguish immune from susceptible children, and thus determine the need for prophylaxis following exposure.

Poliomyelitis

Two reports[2,3] by Dr. W. McD. Hammon and his associates are available on the epidemiological studies which form the basis for the use of gamma globulin in the prophylaxis of paralytic poliomyelitis. The children investigated ranged in age from one to eleven years and the doses used were 4, 7 or 11 cc., depending on the weight of the child. The average dose approximated 0.14 cc. per pound body weight.

Significant protection was demonstrated from the second through the fifth week following injection and diminishing protection was evident from the sixth to the eighth week. There was no significant difference in the number of cases of poliomyelitis in the treated and control groups in the week following injection, but there was evidence of mitigation of paralysis in the cases occurring in the children who had received gamma globulin. This evidence is the basis for the conclusion that gamma globulin will be most effective if given shortly before or as soon as possible after infection. It is of no value after clinical symptoms of the disease have become apparent.[1]

Criteria for Diagnosis.—It will be noted that the basis for allocation to the States is dependent upon the reported incidence of the disease, with the suggestion that the incidence of paralytic cases may be used as a control in making additional and supplemental allocations.

To insure uniform reporting it is suggested that physicians and health departments adopt criteria for diagnosis similar to those formulated by the National Conferences on Recommended Practices for the Control of Poliomyelitis.[5] The following is an excerpt from the above document.

"Diagnostic criteria of paralytic or non-paralytic poliomyelitis should generally include three or more of the following:

1. history compatible with poliomyelitis
2. fever
3. stiff neck and/or stiff back
4. 10 to 500 cells per cc. of spinal fluid taken during the acute or early convalescent period of the disease
5. spinal fluid protein elevated above normal limits
6. demonstrable muscle weakness or paralysis.

"Cases which present only (1) history compatible with poliomyelitis, and (2) fever, should be classified as presumptive (abortive) poliomyelitis.

"Paralytic cases are defined as those in which definite weakness or paralysis has been detected and persisted during at least two examinations made at intervals of at least several hours. Results of an examination for paralysis of muscles of the extremities or trunk may be very unreliable during the period of muscle tenderness or 'spasm.'"

Community Prophylaxis.—Community prophylaxis of age groups at the greatest risk is indicated only in areas in which the incidence is exceptionally high and the onset of the epidemic is abrupt. In Hammon's studies in Harris County, Texas, where the epidemic rate was 82/100,000, only 0.4 cases were prevented per 1,000 injections. The effectiveness rose to 3.4 per 1,000 in the Iowa study where the epidemic rate was nearly 400/100,000. A further difference between these two epidemics lay in the fact that the former was prolonged over many months whereas the majority of the cases in Iowa occurred in a period of two months. The effectiveness of mass prophylaxis is proportional to the incidence of the disease in the selected age group during the few weeks following injection and is influenced by the intensity of the outbreak as distinct from its ultimate rate. Mass prophylaxis is most effective if instituted about three weeks prior to the peak of an unusually intense epidemic.

Household Contacts of Clinically Diagnosed Cases.—During epidemics, the incidence of secondary cases in families is five to twenty times the rate of poliomyelitis in the general population. That is to say, the members of a family in which a case occurs are subject to a much higher risk than are individuals in the community at large. On the basis of risk alone there would appear to be good reason to give priority to the prophylaxis of family contacts. There are, however, no controlled studies of the effectiveness of gamma globulin in the protection of household contacts of diagnosed cases. There is much evidence to indicate that infection is often widespread in families at the time the first case is recognized. If gamma globulin were effective only when given prior to infection the case for household prophylaxis would be prejudiced. Hammon's results suggest, however, that inoculation after infection but prior to the onset of symptoms may be expected to modify the disease although it may not prevent it.

It has been observed that 60 per cent of secondary cases within a household occur within five days of the diagnosis of the first case. Even if gamma globulin is administered promptly to the household contacts, it will not be expected to prevent or modify the severity of disease in these cases. An additional 30 per cent of the secondary cases will occur within a few days of inoculation. Hammon's results suggest that this group of cases may be mitigated in severity.

The final 10 per cent of secondary cases will occur in the period in which the protective effect of gamma globulin is maximal and it is this fraction of cases that one may hope to prevent by the use of household prophylaxis. This would, at first sight, appear to be a poor return on the investment were it not a fact that the rates for this small fraction of delayed cases are comparable with the rates among all children in epidemic areas. On this basis, household prophylaxis may be expected to be as effective (cases prevented per 1,000 doses of gamma globulin) as community prophylaxis in the prevention of epidemic poliomyelitis and may be more effective if weight is given to modification as well as prevention of the disease. In areas in which epidemic proportions have not been attained, there will be no justification for general community prophylaxis.

Intimate Contacts of Clinically Diagnosed Cases.—This is simply an extension of household prophylaxis to include individuals who are judged to have been as intimately associated with the diagnosed case as were the members of the household. The extension is logical but raises the difficulty of defining the criteria of intimacy. The method is likely to be most useful in rural and in self-contained suburban communities in which the number of intimate contacts of an individual is limited.

The extension of prophylaxis from household contacts to equally intimate contacts must be used with restraint; otherwise, the allocations to States will be rapidly depleted. It is anticipated that the responsibility for the definition of extra-household contacts and the areas within the State in which this method of prophylaxis may be used to advantage will rest with the State Health Officer.

Household Contacts of Suspected Cases.—The immunization of household contacts of suspected cases may be viewed as a selective form of community prophylaxis which is specifically directed toward those individuals in the community subject to the most intimate exposure to the virus of poliomyelitis at the time that prophylaxis is undertaken. The use of this method is advocated only in intense epidemic situations. It may be particularly valuable in sparsely populated areas in which sporadic cases lead to extremely high rates of incidence but which are not suited to mass prophylaxis.

The method has the merit of giving protection to individuals who may be exposed to infection several days earlier than would be possible were the injections delayed until the physician could make a more certain diagnosis. There is a further hypothetical advantage which is of quite undetermined value although it may be most significant. Infection with the poliomyelitis virus is much more likely to be abortive than paralytic. It follows that the first invasion of a family by the virus is probably evidenced only by a case of minor illness. Should the case actually be one of poliomyelitis, immunization of the family at this time may prevent any paralytic case from developing.

The prophylaxis of contacts of suspected cases has serious disadvantages. Its efficacy is just as dependent as is that of community prophylaxis on the accurate prediction of epidemic conditions. If it is used in other than epidemic areas, much gamma globulin will be squandered on contacts of minor illnesses, a negligible proportion of which are poliomyelitis infections.

The method has been described as a selective form of community prophylaxis. It differs in that the office of every physician in the area will become a prophylactic clinic. From one point of view, this will simplify administration by avoiding the problems that are associated with the organization of centralized clinics. On the other hand, if a significant fraction of the total population in the area is involved, it may overtax the physicians and result in undesirable delay in completing the required number of injections.

Summary

It is estimated that about 1,000,000 average doses of gamma globulin will be available for the prophylaxis of poliomyelitis during 1953. The selection of the group of individuals in which this limited supply of material can be used most effectively presents many epidemiological and administrative problems. Four alternative methods have been recommended by the Division of Medical Sciences, National Research Council, and have been incorporated in the allocation plan adopted by the Office of Defense Mobilization. The advantages and disadvantages of these methods in particular situations are reviewed. The allocation plan is based on the principle that it is the local health officer who is in the best position to decide which method of prophylaxis will most effectively meet each local situation as it arises.

The household contact plan would appear to be the most effective in areas of low or moderate incidence, with possible extension to include intimate contacts other than family members. With high epidemic incidence in a community with an intense outbreak, either community prophylaxis of age groups particularly susceptible or extension of the household contact plan to include contacts of suspected cases may be suitable. Factors such as community size, expected severity and duration of the epidemic, facilities for the injection of large numbers of individuals and the availability of gamma globulin may influence the decision as to the plan for emphasis in a particular area.

The plans are of sufficient latitude, however, to apply to almost any situation, and appear to offer some hope of restricting the use of the scarce material to the groups at greatest risk.

References

1. Bahlke, Anne M., and Perkins, J. E.: Gamma globulin for paralytic poliomyelitis. J.A.M.A., 129:1146-1150 (Dec. 22) 1945.
2. Hammon, W. McD.; Coriell, L. L.; Wehrle, P. F.; Klimt, C. R., and Stokes, J., Jr.: Evaluation of Red Cross gamma globulin as a prophylactic agent for poliomyelitis. III. Preliminary report of results based on clinical diagnoses. J.A.M.A., 150:757-760 (Oct. 25) 1952.
3. Hammon, W. McD.; Coriell, L. L., and Wehrle, P. F.: Evaluation of Red Cross gamma globulin as a prophylactic agent for poliomyelitis. IV. Final report of results based on clinical diagnoses. J.A.M.A., 151:1272-1285 (Apr. 11) 1953.

Acknowledgment

Swartout, H. O., and Frank, W. P.: Multple Familial Cases of Poliomyelitis, J.A.M.A., 125:488-490 (June 17) 1944.

Unpublished data from Dr. Gaylord Anderson, University of Minnesota School of Public Health (1946).

Unpublished data from Dr. R. F. Korns, New York State Health Department (1950).

Unpublished data from Dr. William McD. Hammon, University of Pittsburgh Graduate School of Public Health (1951-52).

CHANGE IN VITAL STATISTICS LAW TO AFFECT PHYSICIANS BEGINNING JULY 1, 1953

Physicians must be aware of a fundamental change in the Vital Statistics Law which affects birth and death registration in townships and villages and in certain cities beginning with July 1, 1953.

The amended Vital Statistics Law provides:

1. That villages and townships cease to be primary registration districts for birth and death registration purposes.
2. That cities may remain as primary registration districts if they elect by ordinance to continue local registration of births and deaths.
3. That each county will be a primary registration district.
4. That local registrar in each county will be the Clerk of the District Court, and the local registrar in each city adopting a registration ordinance will be the Health Officer.
5. BIRTH CERTIFICATES FOR CHILDREN BORN OUT OF WEDLOCK WILL CONTINUE TO BE FILED WITH THE STATE REGISTRAR, DR. A. J. CHESLEY, SAINT PAUL.

Physicians filing birth certificates on or after July 1, 1953, without respect to date of birth, must file them as provided by the amended Vital Statistics law which reads as follows:

Minnesota Statutes 1949, Section 144.151 and 144.157 as amended by Chapter 309, Laws of 1953.

Section 144.154.—For the purpose of sections 144.151 to 144.204, each city which by ordinance elects to maintain local registration of vital statistics and each county shall constitute a primary registration district. The state registrar may establish registration districts on United States government reservations and appoint local registrars for them.

Section 144.157. Subd. 1.—In the cities which by ordinance elect to maintain local registration of vital statistics the health officer shall be the local registrar. In counties the clerk of the district court shall be the local registrar.

ANALYSIS OF TUBERCULOSIS CASE REGISTERS IN MINNESOTA

(Continued from Page 486)

December 31, 1951; June 30, 1952; and December 31, 1952. Through the co-operation of the agencies concerned, considerable progress has been made in simplifying and clarifying the reports, so that for the first time a reasonably accurate tabulation is possible of several basic factors.

The analysis has included only the file of current cases as contrasted to the file of closed cases. A current case in a tuberculosis register is one which is administratively active in the sense that the case is under current medical supervision or in need of such supervision. Some agencies with well-developed health organizations can extend supervision to more cases of tuberculosis and for longer periods than can be done by other jurisdictions, but in either instance the cases included in their current files represent the work load of tuberculosis recognized by the agency as their primary problem. Thus, in the fifteen years from 1938 through 1952, 42,273 cases of tuberculosis were reported to the State Health Department in Minnesota. Many of these individuals have since died, been lost track of, moved out of the state, healed, or are in no need of supervision. Yet, as of December 31, 1952, as shown in the attached tables, 12,795 cases of tuberculosis were still in the current files of health agencies in the state, and presumably were receiving supervision to some degree so that they were administratively active.

In classifying cases of tuberculosis from the clinical standpoint, the uniform terms and definitions published every ten years by the National Tuberculosis Association have been accepted and employed by most reporting agencies and are used in the register analysis here described. Thus, of the total 12,795 current cases of tuberculosis, 10,969 are classified as pulmonary tuberculosis, and include 700 non-white persons. From the standpoint of clinical activity of the disease itself, 2,026 pulmonary cases are clinically active and thus potential sources of new infections. As of December 31, 1952, 509 of these active pulmonary cases were at home or somewhere other than in hospital, and an additional 109 clinically active cases of non-pulmonary tuberculosis were recorded as outside of hospitals and sanatoria.

These are the more striking findings that appear from looking at the records. Undoubtedly, many of the cases now included in current files could be properly transferred, after review, to closed files, thus decreasing the apparent tremendous burden of tuberculosis cases that continue to need supervision. More important, however, and the real key to eventual elimination of tuberculosis, is the great need to strengthen and expand the services of all health agencies concerned so that more supervision of more cases, both current and closed, can be provided. By more frequent physical examinations, x-rays, and health supervision, current cases will become noninfectious for others, and closed cases that break down and become clinically active will be discovered earlier. Early discovery of infectious cases and prevention of spread of the disease to new victims remain the keystones to tuberculosis control.

Medical Economics

Edited by the Committee on Medical Economics
of the
Minnesota State Medical Association
George Earl, M.D., Chairman

REORGANIZATION PLAN GOES INTO EFFECT

The Eisenhower administration's Reorganization Plan No. 1, of 1953 has gone into effect, with the sanction and blessing of the House of Delegates of the American Medical Association, which group also put an important reservation on the operation of the plan.

The reorganization plan transfers all functions of the Federal Security Administration into the new executive department, officially titled the Department of Health, Education and Welfare. The new department will also have a Special Assistant to the Secretary of Health and Medical Affairs, and the plan provides: "There shall be in the Department a Special Assistant . . . who shall be appointed by the President by and with the advice and consent of the Senate from among persons who are recognized leaders in the medical field with wide non-governmental experience, shall review the health and medical programs of the Department and advise the Secretary with respect to the improvement of such programs and with respect to nesessary legislation in the health and medical fields, and shall receive compensation at the rate now or hereafter provided by law for assistant secretaries of executive departments."

The acceptance of the plan by the AMA House of Delegates marks a new departure for that group, for, up to this time, organized medicine has officially supported the creation of a separate Department of Health.

However, serious thought and plenty of heated discussion were enough to prompt delegates to vote for the plan. Meeting in special session on March 14, the delegates voted approval of the administration plan to create a Department of Health, Education and Welfare.

The meeting was highlighted by the appearance of important personages: President Eisenhower, Senator Taft, Mrs. Oveta Culp Hobby, and many officials from the American Medical Association.

President Eisenhower spoke to the delegates in his usual winning manner, asserting that he felt that decisions would be reached that would be for the good of the people of the United States. He stated his faith in Americans' wish to do the right thing, and expressed his confidence that doctors will provide needed medical services, but that they will do so much better with the cooperation and friendship of the administration rather than by its direction or under that of any big "poobah" in this field.

Senator Taft and Congressman Walter Judd both appeared in support of the reorganization plan.

The plan had been submitted to Congress on March 12, thereby foregoing the probability of the creation of a separate Department of Health. According to Dr. Louis H. Bauer, president of the American Medical Association, since there was then no possibility of getting a separate health department, "we were all anxious to see that the best possible status be established for health and medicine." Dr. Bauer reports the new special assistant's responsibilities as follows:

> "As a result the reorganization plan introduced provided a new position, that of a special assistant to the Secretary. All medical activities within the new department, as well as all medical phases of any activities within education or social security, must be cleared through this special assistant to the Secretary. This will include appropriations and budgets as well as policies. The same special assistant will also be the representative of the Secretary at all interdepartmental meetings at which health will be a topic for discussion and also at congressional hearings where appropriations involving health will be discussed. Furthermore, this special assistant must be selected from among persons who are recognized leaders in the medical field. . . . This gives medicine a status of dignity and control over medical affairs, subject only to action of the Secretary."

Resolution Adopted

The resolution which the House of Delegates adopted on March 14, explains previous stands and gives adequate reasons why a new position has been taken. It states:

> "The House of Delegates of the American Medical Association has for nearly 80 years been on record as favoring an independent Department of Health in the federal government. The reason for this stand has been that the House felt that health and medicine should be given a status commensurate with their dignity and importance in the lives of the American people, and that they should be completely divorced from any political considerations.
>
> "The Board of Trustees . . . finds that Reorganization Plan No. 1 of 1953, provides for a special assistant to the Secretary for Health and Medical Affairs. This provision is a step in the right direction which should result in centralized co-ordination under a leader in the medical field of the health activities of the proposed department. Health, therefore, is given a special position. The proposed plan, properly administered, will permit more effective coordination and administration of the health activities of the new Department without interference or control by other branches.
>
> "Previous attempts to raise the Federal Security Agency from an independent agency to the level of an Executive Department have been opposed by the Association because the plan did not meet these aims."

Reaffirms Old Stand

Although the House of Delegates supported Eisenhower's new plan, it firmly stated its preference for a completely independent Department of Health: "The Board of Trustees recommends that the House of Delegates reaffirm its stand in favor of an independent Department of Health but that it support the Reorganization Plan No. 1 of 1953, as being a step in the right direction; that the American Medical Association cooperate in making the plan successful and that it watch its development with great care and interest."

Reservation Included

The statement passed by the House also presented, in no uncertain terms, a reservation of the right to make recommendations to amend any part of the creative legislation which does not live up to certain principles:

> "It should be understood, however, that the Association reserves the right to make recommendations for amendment of the then existing law or to press for the establishment of an independent Department of Health, if the present plan does not, after a sufficient length of time for development, result in proper advancement in and protection of health and medical science and in their freedom from political control."

General agreement exists that the House of Delegates made a wise decision by passing this resolution. The very fact that the medical profession literally reversed itself in this matter, should prove that physicians as an organized group do not always take a negative position, and that when they believe in something, they take action to protect it. Dr. Bauer summed up by saying, "Now . . . we shall be embarking on a new sea of adventure, and I believe the medical profession of the United States can wield a constructive influence on the health of the American people. I am sure that we shall have every possible cooperation from Washington. The address of the President of the United States to the House of Delegates certainly assured us of that."

AMA MEETING PLANNED FOR NEW YORK

The 102nd annual meeting of the American Medical Association is scheduled for June 1-5, in New York. According to the *Journal of the American Medical Association* announcing the meeting, there will be over 400 scientific papers, 260 scientific exhibits, 370 technical exhibits and daily motion picture and television programs. All major specialties in medicine will be represented on the program in some one of the twenty sections.

The exhibits will be located on four adjacent floors of New York's Grand Central Palace. The general meetings of the Scientific Assembly will take place at the Commodore Hotel. The color television will originate from operating rooms and clinics of the New York Hospital and will be viewed on two 5 x 6 foot screens in the Hendrick Hudson room of the Roosevelt Hotel. The American Medical Association House of Delegate sessions will be held in the Grand Ballroom of the Waldorf-Astoria Hotel.

Social and sports events have been arranged, as usual, and all Association members are invited to participate in these functions. Auxiliary meetings are scheduled in conjunction with the doctors' meetings. Complete detailed accounts of meeting arrangements will be found in the April 11 issue of the *Journal of the American Medical Association.*

NATIONAL HEALTH COUNCIL REVIEWS COMMISSION REPORT

Delegates to the National Health Council meeting in New York on March 19, considered the report of the President's Commission on the Health Needs of the Nation. The Council is made up of some forty member organizations, of which the American Medical Association is one. Of late there has been considerable doubt about the general tone of the statements of the Council, and, as a result, some member groups have withdrawn support.

The meeting was divided into groups, each considering certain phases of the commission's report: "Paying the Bill for Personal Health Services," "Meeting the Needs for Health Personnel," "Building Better Health Facilities, " "Organizing Health Services More Effectively," and "Fostering Research for Better Health."

The meeting was well attended, and interest ran high—especially in the group whose topic was devoted to financial considerations in medical care. The discussion was thorough, and much objection was evident over the general statements and conclusions of the Commission. There was sentiment that the Commission had failed to close the door to consideration of compulsory health insurance as an answer to health needs problems, even though individual Commission members had supposedly expressed opposition to it.

The meeting, lively as it was, passed no official sanction or denunciation of the report of the President's Commission on the Health Needs of the Nation. Representatives from the American Medical Association and from many state medical associations were in attendance, and their opinions and ideas about the report were strongly expressed and accepted by the conference as a whole.

FEDERAL GOVERNMENT UNDERWRITES INSURANCE

The United States' government is in the insurance underwriting business—not underwriting insurance for its own activities, but doing it for risks to which private property and private business activities are exposed.

According to a recent issue of "Insurance Economics Surveys" the government is conducting eleven major insurance operations, spread over the fields of life insurance, pensions, financial guarantees and property insurance of all kinds. The report states:

> "The liability which the Federal Gvernment has assumed to pay death benefits under the social security law is greater than the entire amount of private life insurance in force, while the Government's liability to pay pensions under social security is estimated at 10 to 15 times greater than all of the annuity business on the books of the private insurance companies."

It is also interesting to note, the report states, that the taxes collected by the social security system for these two kinds of benefits are little more than one-third of the amount of premium income collected by the private life insurance companies.

The report quotes the eleven fields of government underwriting activities as:

1. Life insurance for men in the armed services and veterans.
2. Marine and aviation war risk insurance.
3. Old age and survivors insurance.
4. Railroad employes' retirement system.
5. Civil service employes' retirement system.
6. Unemployment compensation.
7. Federal employes' compensation
8. Crop insurance.
9. Insurance of commodities under Commodity Credit Corporation loans.
10. Guarantees of bank and other depositories.
11. Guarantees of mortgage loans.

VACCINES NOT PROVED

Poliomyelitis vaccines must be proved both effective and safe before public health authorities will be convinced of their acceptability. No polio vaccine has yet been proved both effective and safe, nor can the safety of such a vaccine be determined until it has been tested on a large enough group—preferably from 50,000 to 70,000 children. There are three distinct strains of polio virus, and no vaccine available at present will protect against all three. A really safe vaccine must be safe for the unusual individual, not merely for the majority. A vaccine that is safe for only 990 children out of a thousand is "worse than a polio epidemic."

These were some of the comments made by Dr. Gaylord W. Anderson, director of the School of Public Health, University of Minnesota, speaking at Hennepin County Health Day on "Can We Prevent Polio?" Ultimate solution of the polio problem will probably be a vaccine, said Dr. Anderson, but he added that "our hopes have been raised a bit prematurely." It is unlikely, he added, that either a safe vaccine or sufficient supplies of gamma globulin for preventing or modifying the effects of polio will be available in the near future.—*Minnesota's Health,* March, 1953.

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

230 Lowry Medical Arts Bldg., Saint Paul, Minnesota

Julian F. Du Bois, M.D., Secretary

PHYSICIANS LICENSED FEBRUARY 15, 1952

January, 1952, Examination

Name	*School*		*Address*
AARO, Leonard Arthur	Northwestern U.	MD 1950	1117 N. Main, Aberdeen, S .D.
AKEY, Robert McKinley	U. of Kansas	MD 1946	102-110 2nd Ave. S.W., Rochester, Minn.
BLANSHARD, Thomas Paul	U. of London, England	Bach. of Med. & Surg. 1939 MD 1947	Kaiser-Fontana Hosp., Fontana, Cal.
CAMPBELL, Malcom Kruse	U. of Iowa	MD 1948	Malvern, Iowa
COHEN, Morley	U. of Manitoba	MD 1948	U. of Minn. Hosp., Minneapolis, Minn.
FORTNER, Jr., Edgar Sidney	U. of Oregon	MD 1951	Sacramento City Hosp., Sacramento, Cal.
FRASER, Robert Stewart	U. of Alberta	MD 1946	U. of Minn. Hosp., Minneapolis, Minn.
LARSON, Roger Clarence	U. of Minnesota	MB 1950 MD 1951	Columbia Hosp. for Women, Wash., D. C.
MENSHEHA, Nicholas	U. of Lemberg & U. of Munich, Germany	"Physician" 1949	Forest Lake, Minn.
MOYER, Jr., Ralph David	Jefferson Med. Col.	MD 1950	509 2nd Ave., Two Harbors, Minn.
RICHARDS, Albert Gerald	U. of Alberta	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
STRUXNESS, David F.	U. of Minnesota	MB 1951	Alexandria, Minn.
TAUBER, Allan Swartz	U. of Toronto	MD 1943	U. of Minn. Hosp., Minneapolis, Minn.
THYSELL, Harold Robert	U. of Minnesota	MB 1951	119 N. Broadway, Crookston, Minn.
WACK, Mary Margaret	Marquette U.	MD 1950	416 22nd Ave. S., Minneapolis, Minn.
WEST, Robert Kooper	U. of Minnesota	MB 1951	Mpls. Gen. Hosp., Minneapolis, Minn.
WORTHEN, Howard George	Northwestern U.	MD 1951	U. of Minn. Hosp., Minneapolis, Minn.

Reciprocity Candidates

Name	*School*		*Address*
BARR, Jr., James Howard	Western Reserve U.	MD 1943	1009 Nicollet Ave., Minneapolis, Minn.
BERNSTEIN, Dorothy Milzer	U. of Colorado	MD 1949	U. of Minn. Health Service, Mpls., Minn.
BUCKLEY, Lawrence Robert	U. of Nebraska	MD 1950	Miller Hospital, St. Paul, Minn
COLLINS, Loren Edwin	Creighton U.	MD 1934	102-110 2nd Ave. S.W., Rochester, Minn.
CONNELLY, Michael E.	U. of Pittsburgh	MD 1939	102-110 2nd Ave. S.W., Rochester, Minn.
COUNTS, Robert Noble	U. of Virginia	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
CRUMBLEY, Jr., James Jernigan	U. of Georgia	MD 1945	102-110 2nd Ave. S.W., Rochester, Minn.
DEAN, David Lea	U. of Wisconsin	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
DOBKIN, Allen Benjamin	U. of Toronto	MD 1949	U. of Minn. Hosp., Minneapolis, Minn.
DWYER, Jr., William Edward	Western Reserve U.	MD 1943	102-110 2nd Ave. S.W., Rochester, Minn.
GOULD, Purdue Leighton	Washington U., Mo.	MD 1948	U. of Minn. Hosp., Minneapolis, Minn.
HENN, Mary Josephine	U. of Nebraska	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
HRANILOVICH, George T.	Loyola U.	MD 1945	102-110 2nd Ave. S.W., Rochester, Minn.
KARAVITIS, Andrew Lee	U. of Utah	MD 1948	102-110 2nd Ave. S.W., Rochester, Minn.
KOEFOOT, Richard Bruce	U. of Nebraska	MD 1950	Miller Hospital, St. Paul, Minn.
LACY, Paul Eston	Ohio State U.	MD 1948	102-110 2nd Ave. S.W., Rochester, Minn.
McCANTS, Ralph Samuel	U. of Oklahoma	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
McKEE, Robert Earl	U. of Pittsburgh	MD 1948	102-110 2nd Ave. S.W., Rochester, Minn.
MORRISON, Samuel Slemmons	Harvard U.	MD 1947	102-110 2nd Ave. S.W., Rochester, Minn.
PETERS, Myra Ann	U. of Alabama	MD 1949	102-110 2nd Ave. S.W., Rochester, Minn.
PETTET, Jacqueline Dorothea	U. of So. Calif.	MD 1949	102-110 2nd Ave. S.W., Rochester, Minn.
PITCHFORD, Jr., Clyde Alfred	Stanford U.	MD 1945	3764 12th St., Riverside, Cal.
ROSS, Paul J.	U. of Louisville	MD 1946	102-110 2nd Ave. S.W., Rochester, Minn.
TORGHELE, John Ray	U. of Utah	MD 1946	State Hosp., Hastings, Minn.

National Board Candidates

Name	*School*		*Address*
CAMPBELL, Charles Garnet	U. of Michigan	MD 1948	102-110 2nd Ave. S.W., Rochester, Minn.
DOLPHIN, James Aloysius	Tufts Col. Sch. Med.	MD 1949	102-110 2nd Ave. S.W., Rochester, Minn.
EGDAHL, Richard Harrison	Harvard U.	MD 1950	Route 1, Eau Claire, Wis.
ERICKSON, John Gordon	Queen's U.	MD 1949	102-110 2nd Ave. S.W., Rochester, Minn.

HOFFMAN, II, Harry Natt	Creighton U.	MD 1949	102-110 2nd Ave. S.W., Rochester, Minn.
JOHNSON, Angelo Gordon	Syracuse U.	MD 1944	102-110 2nd Ave. S.W., Rochester Minn.
OMINES, Janine Yolande	New York Med. Col.	MD 1949	102-110 2nd Ave. S.W., Rochester, Minn.
ROWELL, Jr., Forrest Ardell	Tufts Med. Col.	MD 1938	Thief River Falls, Minn.
SCHWARZ, Bert Eric	New York U.	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
TARANTINO, Joseph Carl	Tufts Col. Sch. Med.	MD 1948	102-110 2nd Ave. S.W., Rochester, Minn.
WEIDMAN, William Harry	U. of Colorado	MD 1947	102-110 2nd Ave. S.W., Rochester, Minn.
WOOD, William Warren	Harvard U.	MD 1946	102-110 2nd Ave. S.W., Rochester. Minn.

PHYSICIANS LICENSED MAY 15, 1952

April, 1952, Examination

Name	*School*		*Address*
ANTEL, John Joseph	U. of Chicago	MD 1945	102-110 2nd Ave. S.W., Rochester, Minn.
ARMS, James John	Marquette U.	MD 1951	6224 Lyndale Ave. S., Minneapolis, Minn.
ATNIKOV, Murray Gerald	U. of Manitoba, Can.	MD 1950	U. of Minn. Hosp., Minneapolis, Minn.
BACON, John Louis	U. of Maryland	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
BERRIS, Harold	U. of Toronto	MD 1949	1620 3rd Ave. S., Minneapolis, Minn.
BESSE, Jr., Byron Earl	Jefferson Med. Col.	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
BOLIN, Robert Cornwall	U. of Utah	MD 1946	Vet. Adm. Hospital, Minneapolis, Minn.
BRANDENBURG, John Tunis	Northwestern U.	MB 1949 MD 1951	102-110 2nd Ave. S.W., Rochester, Minn.
BROWN, Cyrus Cathey	Harvard U.	MD 1950	Vet. Adm. Hospital, Minneapolis, Minn.
BURCHAM, Jr., Thomas Addison	Washington U.	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
CHELTON, Louis Guy	U. of Maryland	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
COSERIU, Vasile Gregory	U. King Ferdinand Cluj, Rumania	MD 1946	1225 St. Germain St., St. Cloud, Minn.
DORSEY, Cletis Stewart	Northwestern U.	MB 1944 MD 1945	102-110 2nd Ave. S.W., Rochester, Minn.
GEE, Vernon Ray	Northwestern U.	MB 1946 MD 1947	102-110 2nd Ave. S.W., Rochester, Minn.
GORDON, John Jegi	Creighton U.	MD 1950	405 W. Clinton, Indianola, Iowa
HAMILTON, Jr., Warren W.	U. of Buffalo	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
HARLINE, Wesley Grant	Temple U.	MD 1945	3410 S. 11th E., Salt Lake City, Utah
HENDRICKS, Everett Dale	Northwestern U.	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
HENEKS, Helen I. Andreasen	U. of Iowa	MD 1951	Pequot Lakes, Minn.
HENSON, Jr., Stanley Willard	U. of Maryland	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
HERNDON, Richard Fleetwood	Northwestern U.	MB 1950 MD 1951	102-110 2nd Ave. S.W., Rochester, Minn.
HOLT, Fleurene Podolle	Syracuse U.	MD 1950	44 A. Rose Terrace, Ft. Knox, Ky.
HUMPHREY, Edward William	U. of Minn.	MB 1951 MD 1952	10 N. 5th St., Moorhead, Minn.
JEREMIAS, Martin Tiberiu	Queen's U.	MD 1949	102-110 2nd Ave. S.W., Rochester, Minn.
KASALES, Clarence John	Temple U.	MD 1946	Flourtown P. O. Bldg., Flourtown, Pa.
KELEN, Andrew	McGill U.	MD 1943	102-110 2nd Ave. S.W., Rochester, Minn.
KOONS, Wilbur Robert	Northwestern U.	MB 1950 MD 1951	Sasse Bldg., Lidgerwood, No. Dak.
KOVACK, Freeman D.	Ludwig-Maximillians Munich, Germany	"Phys." 2-13-47 MD 1948	333 Med. Arts Bldg., Mpls., Minn.
LANDSTRA, Robert Frank	U. of Michigan	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
LAPP, Paul Ward	U. of Toronto	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
LYZENGA, Anton Gerald	U. of Michigan	MD 1951	Ancker Hospital, St. Paul, Minn.
McKIBBEN, Helena	Johns Hopkins U.	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
MANKIN, Harold Turner	Johns Hopkins U.	MD 1948	102-110 2nd Ave. S.W., Rochester, Minn.
MISHEK, Charles Joseph	Marquette U.	MD 1951	1698 Lexington Ave., St. Paul, Minn.
NIELSEN, Ray Hammond	U. of Pennsylvania	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
NYHUS, Ralph Ekle	U. of Minnesota	MB 1951	102-110 2nd Ave. S.W., Rochester, Minn.
RAMIREZ de ARELLANO, Alfredo A.	Harvard U.	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
RINGER, Jr., Merritt Gartley	Northwestern U.	MB 1950	102-110 2nd Ave. S.W., Rochester, Minn.
RIPEPI, James D.	Jefferson U.	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
ROBINSON, David Bancroft	U. of Pennsylvania	MD 1949	102-110 2nd Ave. S.W., Rochester, Minn.
ROGERS, Arnold Gerald	U. of Manitoba	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
THOMPSON, Jr., J. Lawn	George Washington U.	MD 1936	1714 N. St., N.W., Washington, D. C.
VOGELE, Alvin C.	Temple U.	MD 1951	Vet. Adm. Hospital, Denver, Colo.
WEBER, Robert George	Northwestern U.	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
WILKINSON, Jr., George Richard	Johns Hopkins U.	MD 1949	102-110 2nd Ave. S.W., Rochester, Minn.

Reciprocity Candidates

Name	*School*		*Address*
BADER, Jean Lyon	U. of Nebraska	MD 1951	Slayton, Minn.
CLARKE, John Whitlock	U. of Louisville	MD 1951	Watertown, Minn.
CRAIG, Richard Morton	U. of Indiana	MD 1945	102-110 2nd Ave. S.W., Rochester, Minn.
DEGNER, Albert Frederick	U. of Nebraska	MD 1947	Admiral Bldg., Bremerton, Wash.

FRERICHS, Cletus Troy	U. of Nebraska	MD 1947	102-110 2nd Ave. S.W., Rochester, Minn.
GARRETT, Jr., Charles Melvin	Med. Col. of Va.	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
GRIFFIN, Jr., John Wheeler	Columbia U.	MD 1940	522 Beltrami Ave., Bemidji, Minn.
GROSH, John Livingston	Temple U.	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
HAIGLER, Jr., Frank Haldane	U. of Illinois	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
McELWEE, Mary Louise	U. of Oklahoma	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
NISIUS, George Fred	Loyola U.	MD 1942	205 W. 2nd St., Duluth, Minn.
PAINTER, Robert Henry	Jefferson Med. Col.	MD 1950	Two Harbors, Minn.
PARKER, Philip John	Jefferson Med. Col.	MD 1942	109 Labree Ave. S., Thf. Rvr. Fls., Minn.
SAWTELL, Robert Rhyle	U. of Nebraska	MD 1951	Jeffers, Minn.
SMITH, Lowell Ralph	U. of Iowa	MD 1946	102-110 2nd Ave. S.W., Rochester, Minn.
STOLTZ, Robert Charles	Marquette U.	MD 1945	711 Phys. & Surg. Bldg., Mpls., Minn.
THOMAS, Lewis	Harvard U.	MD 1937	U. of Minn. Heart Hosp., Mpls., Minn.
TYLER, Donald Earl	U. of Oregon	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
UTZ, David Charles	St. Louis U.	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
ZIMMER, James Francis	Marquette U.	MD 1946	102-110 2nd Ave. S.W., Rochester, Minn.

National Board Candidates

Name	*School*		*Address*
KROEKER, Edwin John	McGill U.	MD 1947	102-110 2nd Ave. S.W., Rochester, Minn.
LEUALLEN, Edmund Curtis	U. of Pennsylvania	MD 1946	102-110 2nd Ave. S.W., Rochester, Minn.
SCHOLER, John Frederick	Johns Hopkins U.	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
SILVER, Arthur Wexler	Hahnemann Med. Col.	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
SMITH, Orson Pratt	Long Island Col.	MD 1947	Vet. Adm. Hospital, Minneapolis, Minn.

PHYSICIANS LICENSED JULY 18, 1952

June, 1952, Examination

Name	*School*		*Address*
ANDERSON, Richard Robert	U. of Minnesota	MB 1952	Good Samaritan Hosp., Portland, Ore.
ANDERSON, Roger Eugene	U. of Minnesota	MB 1952	Mary Hitchcock Mem. Hosp., Hanover, N. H.
ANDERSON, Roger Lewis	U. of Minnesota	MB 1951	Penney Bldg., Detroit Lakes, Minn.
BARNES, Richard E.	U. of Minnesota	MB 1952	Santa Clara Hosp., San Jose, Cal.
BENTZ, Herman Duane	U. of Minnesota	MB 1952	Denver General Hosp., Denver, Colo.
BLOOM, Sanford	U. of Minnesota	MB 1951 MD 1952	Gladewater, Texas
BONNER, John Lawrence	U. of Minnesota	MB 1952	St. Luke's Hospital, Duluth, Minn.
BOUMA, John H.	U. of Minnesota	MB 1952	2221 Madison Ave., Toledo, Ohio
BOWES, Donald Earl	Queen's U.	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
BROCKWAY, Roger Warren	U. of Minnesota	MB 1952	St. Luke's Hospital, Duluth, Minn.
BROWN, Marshall Francis	U. of Minnesota	MB 1952	Providence Hospital, Portland, Ore.
CANINE, James Lee	U. of Minnesota	MB 1952	Ancker Hospital, St. Paul, Minn.
CARLSON, Vernon John	U. of Minnesota	MB 1951	10 N. 5th St., Moorhead, Minn.
CHILD, Sherman Bradford	U. of Minnesota	MB 1952	Sacramento Co. Hosp., Sacramento, Cal.
CHUNG, Gloria Ru-Wen Wong	U. of Minnesota	MD 1949	29-56 172nd St., Flushing 58, L. I., N. Y.
CLOUGH, John	Washington U., Mo.	MD 1944	4 Chestnut St., Massena N. Y.
COPELAND, Norman B.	Marquette U.	MD 1951	St. Mary's Hospital, Duluth, Minn.
DE COSSE, Jerome Joseph	U. of Minnesota	MB 1952	Roosevelt Hospital, New York, N. Y.
DE GEEST, James Henry	U. of Minnesota	MB 1952	508 Univ. Village, Minneapolis, Minn.
DIAMOND, Norman Jack	U. of Minnesota	MB 1952	USPHS Hospital, Seattle, Wash.
DOKKEN, James Hetherington	U. of Minnesota	MB 1952	Mt. Sinai, Hosp., Minneapolis, Minn.
DOUVILLE, Elmer Louis	U. of Ottawa	MD 1951	102-110 2nd Ave. S.W., Rochester, Minn.
EILERS, Russell Jay	U. of Minnesota	MB 1952	Vet. Adm. Hospital, Long Beach, Cal.
ERICKSON, Vernon Douglas	U. of Minnesota	MB 1952	Cleveland City Hosp., Cleveland, Ohio
FALLON, Virgil Thomas	U. of Minnesota	MB 1952	Mary Hitchcock Mem. Hosp., Hanover, N. H.
FERRAND, Paula Thon	Jan Kazimierz U. Lwow, Poland	Dr. of Med.'25	State Hospital, Moose Lake, Minn.
FETZEK, Albert David	U. of Minnesota	MB 1952	Mpls. Gen. Hosp., Minneapolis, Minn.
FOX, Donald Peter	U. of Minnesota	MB 1952	Mpls. Gen. Hosp., Minneapolis, Minn.
GALEJS, Aina	Baltic U. and U. of Hamburg, Germany	Dr. of Med. 1951	Mpls. Gen. Hosp., Minneapolis, Minn.
GAMBLE, Elbert John	U. of Minnesota	MB 1952	Ancker Hospital, St. Paul, Minn.
GARDNER, Jr., Victor Hugo	U. of Iowa	MD 1951	322 Blue Earth Ave., Fairmont, Minn.
GENRICH, Jeanne Frances	Marquette U.	MD 1951	St. Mary's Hospital, Duluth, Minn.
GILBERTSEN, Ada Sigrid	U. of Minnesota	MB 1952	U. of Minn. Hosp., Minneapolis, Minn.
GILBERTSEN, Victor Adolph	U. of Minnesota	MB 1952	U. of Minn. Hosp., Minneapolis, Minn.
GOLDBERG, Marvin Eleazer	U. of Minnesota	MB 1952	Mpls. Gen. Hospital, Minneapolis, Minn.
GOOD, Roy Herbert	U. of Minnesota	MB 1952	Mpls. Gen. Hospital, Minneapolis, Minn.
GRAY, Edward Francis	Marquette U.	MD 1951	698 3rd St., White Bear Lake, Minn.
GRIMMELL, Francis John	U. of Minnesota	MB 1952	Mt. Sinai Hospital, Minneapolis, Minn.
GROHS, William Hunter	U. of Minnesota	MB 1952	St. Luke's Hospital, Duluth, Minn.
GUSTAFSON, Paul O.	U. of Minnesota	MB 1952	St. Joseph's Hospital, St. Paul, Minn.
HAAS, Jack Frederick	U. of Minnesota	MB 1952	Ancker Hospital, St. Paul, Minn.

HANSON, Mildred Schaffer	U. of Minnesota	MB 1951 MD 1952	427 LaSalle Bldg., Minneapolis, Minn.
HARRIS, Charles Lee	U. of Minnesota	MB 1952	Memorial Hospital, Phoenix, Ariz.
HARRIS, Charles Rupert	Baylor U.	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
HAVESON, Samuel Bernard	U. of Minnesota	MB 1952	San Francisco Hosp., San Francisco, Cal.
HEDENSTROM, Paul Henry	U. of Minnesota	MB 1952	St. Luke's Hospital, Duluth, Minn.
HEDINE, Duane Rodney	U. of Minnesota	MB 1952	St. Joseph's Hospital, St. Paul, Minn.
HEEGAARD, William Goddard	U. of Minnesota	MB 1952	Baltimore City Hosp., Baltimore, Md.
HEMPEL, Dean Jacob	U. of Minnesota	MB 1952	Mpls. Gen. Hospital, Minneapolis, Minn.
HENEKS, William Eugene	U. of Iowa	MD 1951	Box 706, Pequot Lakes, Minn.
HENKE, Charles P.	Northwestern U.	MB 1944 MD 1945	Shipman Hospital, Ely, Minn.
HENRY, Kenneth George	U. of Minnesota	MB 1952	Ancker Hospital, St. Paul, Minn.
HESLA, Inman Adolph	U. of Texas S.W. Med. Sch.	MD 1951	209 W. Mill St., Austin, Minn.
HUELSKAMP, Margaret	U. of Minnesota	MB 1949 MD 1950	10030 Story Road, San Jose, Cal.
HUPPLER, Edward G.	U. of Minnesota	MB 1952	St. Joseph's Hospital, St. Paul, Minn.
HUSTAD, Edward Gerald	U. of Minnesota	MB 1952	Mpls. Gen. Hospital, Minneapolis, Minn.
JACKSON, William Charles	U. of Minnesota	MB 1952	St. Joseph's Hospital, St. Paul, Minn.
JOHNSON, Carolyn Adair	U. of Minnesota	MB 1952	Chas. T. Miller Hospital, St. Paul, Minn.
JOHNSTON, Henry Wayne	U. of Minnesota	MB 1952	St. Luke's Hospital, Duluth, Minn.
JONES, Donald A.	U. of Minnesota	MB 1952	Denver Gen. Hospital, Denver, Colo.
KLASS, Donald William	U. of Minnesota	MB 1952	Mpls. Gen. Hospital, Minneapolis, Minn.
KOENIG, Robert Peter	U. of Minnesota	MB 1952	Ancker Hospital, St. Paul, Minn.
KRAGH, Lyle Vernon	U. of Minnesota	MB 1952	130 N. 8th Ave. E., Duluth, Minn.
KUNKEL, Melvin George	U. of Toronto	MD 1945	102-110 2nd Ave. S.W., Rochester, Minn.
LEE, Gordon Eugene	U. of Minnesota	MB 1952	Milwaukee Co. Hosp., Milwaukee, Wis.
LEIFERMAN, Robert Joseph	U. of Minnesota	MB 1952	USAF Letterman Army Hospital, San Francisco, Cal.
L'ESPERANCE, Bernard Francis	U. of Ottawa	MD 1951	102-110 2nd Ave. S.W., Rochester, Minn.
LETSON, Robert D.	U. of Minnesota	MB 1952	Mpls. Gen. Hospital, Minneapolis, Minn.
LINDBLOM, Maurice L.	U. of Minnesota	MB 1952	Detroit Receiving Hosp., Detroit, Mich.
LISTERUD, Mark Boyd	U. of Minnesota	MB 1952	King Co. Hospital System, Seattle, Wash.
LITMAN, Arthur Gene	U. of Minnesota	MB 1952	Jackson Mem. Hospital, Miami, Fla.
LOMMEL, Jerome G.	U. of Minnesota	MB 1952	Grasslands Mem. Hosp., Valhalla, N. Y.
LYNGE, Harold Norman	McGill U.	MD 1949	102-110 2nd Ave. S.W., Rochester, Minn.
McGREGOR, Gordon William	U. of Minnesota	MB 1952	Oakland Naval Hosp., Oakland, Cal.
McHARDY, Bryson Roy	U. of Minnesota	MB 1952	St. Barnabas Hosp., Minneapolis, Minn.
MALERICH, Jr., J. Anthony	U. of Minnesota	MB 1952	Ancker Hospital, St. Paul, Minn.
MALLINGER, Ralph Henning	U. of Minnesota	MB 1952	San Bernardino Co. Charity Hospital, San Bernardino, Cal.
MATSUMOTO, Kenneth K.	U. of Minnesota	MB 1952	San Diego Naval Hosp., San Diego, Cal.
MAYBERG, Donald MacMillan	U. of Minnesota	MB 1952	Madigan Gen. Hosp., Ft. Lewis, Tacoma, Wash.
MOLZAHN, Clifford Douglas	U. of Minnesota	MB 1952	Orange Co. Gen. Hosp., Orange, Cal.
MONNAHAN, James Raymond	U. of Minnesota	MB 1952	Latter-day Saints Hosp., Salt Lake City, Utah
MUELLER, Donald Robert	U. of Minnesota	MB 1952	St. Mary's Hospital, Duluth, Minn.
MURRAY, Roger Cawley	U. of Minnesota	MB 1952	Mary Hitchcock Memorial Hosp., Hanover, N. H.
MUSKE, Marvin Marshall	U. of Minnesota	MB 1952	Milwaukee Co. Hosp., Milwaukee, Wis.
MYRICK, Floyd Forrest	U. of Minnesota	MB 1952	King Co. Hospital System, Seattle, Wash.
NARVERUD, Raymond Arthur	U. of Minnesota	MB 1952	Columbia Hosp., Columbia, S. Car.
NELSON, Charles Henry	U. of Minnesota	MB 1950 MD 1951	Vet. Adm. Hospital, Minneapolis, Minn.
NELSON, Robert Harry	U. of Minnesota	MB 1952	St. Luke's Hospital, Duluth, Minn.
NELSON, Wilhma Bowman	U. of Minnesota	MB 1952	5125 39th Ave. S., Minneapolis, Minn.
PAYNE, Richard Erling	U. of Minnesota	MB 1952	Good Samaritan Hosp., Portland, Ore.
PHELAN, John Thomas	Marquette U.	MD 1947	102-110 2nd Ave. S.W., Rochester, Minn.
PONE, Janis	U. of Latvia, Riga, Latvia	"Physician" 1926	Silver Lake, Minn.
PRLINA, Isaac Michael	U. of Minnesota	MB 1952	Vet. Adm. Hospital, Long Beach, Cal.
REED, Sheldon Cooper	U. of Minnesota	MB 1952	Mpls. Gen. Hospital, Minneapolis, Minn.
ROACH, Donald Edson	U. of Minnesota	MB 1952	1821 6th Ave. Apt. 302, Oakland, Cal.
ROTENBERG, Robert Julius	U. of Minnesota	MB 1952	Ancker Hospital, St. Paul, Minn.
ROYCE, Paul Chadwick	U. of Minnesota	MB 1952	950 E. 59, Chicago, Ill.
SAMET, Charles Merle	U. of Minnesota	MB 1952	Boston City Hospital, II Med. Service, Boston, Mass.
SCALLEN, Raymond Wallace	U. of Minnesota	MB 1952	Mpls. Gen. Hospital, Minneapolis, Minn.
SCALLON, Joseph Edward	U. of Minnesota	MB 1952	Vet. Adm. Hospital, Long Beach, Cal.
SCHAFFHAUSEN, Irwin Francis	U. of Minnesota	MB 1952	Mpls. Gen. Hospital, Minneapolis, Minn.
SCHAFFHAUSEN, Mildred Jane	U. of Minnesota	MB 1952	Mpls. Gen. Hospital, Minneapolis, Minn.
SCHWARTZ, Daniel Phillip	U. of Minnesota	MB 1952	U. S. Marine Hosp., Stapleton, N. Y.
SHAVER, Ward Allison	U. of Manitoba	MD 1944	418 E. Vernon Ave., Fergus Falls, Minn.
SHRAGG, Robert I.	U. of Minnesota	MB 1952	Mpls. Gen. Hospital, Minneapolis, Minn.
SKAIFE, William Francis	Albany Med. Col.	MD 1951	105½ 1st St. S.E., Little Falls, Minn.
SMITH, Nadine Genet	U. of Minnesota	MB 1952	Mpls. Gen. Hospital, Minneapolis, Minn.

SMITH, Richard Thomas	Tulane U.	MD 1950	U. of Minn. Hosp., Minneapolis, Minn.
SOMMERDORF, Vernon Lyle	U. of Minnesota	MB 1952	Ancker Hospital, St. Paul, Minn.
SPENCER, Jean Aileen	U. of Chicago	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
SPRINGER, Elliott B.	U. of Minnesota	MB 1952	Mpls. Gen. Hospital, Minneapolis, Minn.
STRAUCHLER, Jona	U. of Zurich, Switzerland	MD 1935	Belview, Minn.
SWENDSEEN, Carl Johan	U. of Minnesota	MB 1952	Mpls. Gen. Hospital, Minneapolis, Minn.
SWENSON, Donald Burton	U. of Minnesota	MB 1952	Milwaukee, Co. Hosp., Milwaukee, Wis.
TESTOR, James Vincent	U. of Minnesota	MB 1952	St. Joseph's Hospital, St. Paul, Minn.
VENNES, Jack Anderson	U. of Minnesota	MB 1951	Vet. Adm. Hosp., Minneapolis, Minn.
VITOLS, Teodors Mikelis	U. of Latvia Riga, Latvia	"Physician" 11-9-35	1407 7th St. S.E., Minneapolis, Minn.
WITTELS, Benjamin	U. of Minnesota	MB 1952	Gallinger Hosp., Washington, D. C.
WITTHAUS, Melvyn E.	U. of Minnesota	MB 1952	Mpls. Gen. Hospital, Minneapolis, Minn.
WOHLRABE, John Clarence	U. of Minnesota	MB 1952	Memorial Hospital, Phoenix, Ariz.
WYATT, Jr., Arthur Jacob	U. of Minnesota	MB 1952	Queen's Gen. Hospital, Jamaica, N. Y.

Reciprocity Candidates

Name	*School*		*Address*
BURNETT, Jr., Clem Fitch	Med. Col. of Va.	MD 1947	220 S. Broadway, Crookston, Minn.
CAMPBELL, Donald Keith	U. of Iowa	MD 1950	421 N. 9th St., Oskaloosa, Ia.
CLARK, Edward Cargile	Western Reserve U.	MD 1943	102-110 2nd Ave. S.W., Rochester, Minn.
DAVIS, Donald Raymond	Temple U.	MD 1946	102-110 2nd Ave. S.W., Rochester, Minn.
DUMMER, Donald Joseph	Creighton U.	MD 1951	New Brighton, Minn.
FLY, Jr., Orceneth Asbury	U. of Texas	MD 1946	102-110 2nd Ave. S.W., Rochester, Minn.
IRWIN, Homer Russell	U. of So. Cal.	MD 1947	Hibbing Gen. Hospital, Hibbing, Minn.
JASTRAM, Rupert Mitchell	U. of Nebraska	MD 1951	Northwestern, Hosp., Minneapolis, Minn.
JUHL, John Harold	U. of Michigan	MD 1940	604 Med. Arts Bldg., Minneapolis, Minn.
KAISER, Milton Lee	U. of Nebraska	MD 1951	118½ N. Minn. St., New Ulm, Minn.
KINCAID, Owings Wilson	U. of Louisville	MD 1946	102-110 2nd Ave. S.W., Rochester, Minn.
McILHANY, Mary Lou	Vanderbilt U.	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
MILLER, William Jacob	Indiana U.	MD 1945	102-110 2nd Ave. S.W., Rochester, Minn.
ODLAND, Olin Matthew	U. of Nebraska	MD 1950	Granite Falls, Minn.
SCHUTZ, John Charles	U. of Nebraska	MD 1951	Eden Valley, Minn.
SEIDELL, Martin Ambrose	Indiana U.	MD 1946	102-110 2nd Ave. S.W., Rochester, Minn.
SIMPSON, Jr., Harry M.	Med. Col. of Ala.	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
SIVERTSON, Sigurd E.	U. of Wisconsin	MD 1947	102-110 2nd Ave. S.W., Rochester, Minn.
WISE, Robert Irby	U. of Texas	MD 1950	U. of Minn. Hosp., Minneapolis, Minn.

National Board Candidates

Name	*School*		*Address*
DAVIS, Harry Louis	U. of Illinois	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
GILBERT, Jr., Robert Lincoln	Yale U.	MD 1941	1707 Main St., La Crosse, Wis.
KENNEDY, Byrl James	U. of Minnesota	MB 1945 MD 1946	U. of Minn. Hosp., Minneapolis, Minn.
KITTLESON, Kenneth Dale	Columbia U.	MD 1947	Vet. Adm. Hospital, Downey, Ill.
KRAFCHUK, John	Long Island Col. of Med.	MD 1944	U. of Minn. Hosp., Minneapolis, Minn.
KURLAND, Leonard Terry	U. of Maryland	MD 1945	102-110 2nd Ave. S.W., Rochester, Minn.
PIERCE, Edgar Harris	Emory U.	MD 1949	102-110 2nd Ave. S.W., Rochester, Minn.
PLUCKER, Milton Wallace	U. of Nebraska	MD 1951	Clarkfield, Minn.
RUGGIERI, Bartholomew Albert	N. Y. U. Med. Col.	MD 1945	102-110 2nd Ave. S.W., Rochester. Minn.
SMILLIE, II, John Wilson	Cornell U.	MD 1943	U. of Minn. Hosp., Div. of Ophthalmology, Minneapolis, Minn.
TUCKER, Jolyon Simeon	U. of Minnesota	MB 1948 MD 1949	926 St. Clair Ave., St. Paul, Minn.
WEISS, Carl Adolph	McGill U.	MD 1932	Radabaugh Bldg., Hastings, Minn.

PHYSICIANS LICENSED NOVEMBER 21, 1952

October, 1952, Examination

Name	*School*		*Address*
ALLEN, Raymond Archie	U. of Louisville	MD 1946	102-110 2nd Ave. S.W., Rochester, Minn.
BAKER, Donald Bruce	U. of Alberta	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
BERNHISEL, Harris Glenn	U. of Utah	MD 1948	7426 Stevens Ave. S., Minneapolis, Minn.
CARTHEY, Frank Joe	U. of Minnesota	MB 1952	Mpls. Gen. Hospital, Minneapolis, Minn.
CEDARLEAF, Shirley Joan	U. of Minnesota	MB 1951 MD 1952	U. of Minn. Hospitals, Dept. Anesth., Minneapolis, Minn.
COLLINS, Robert Earl	Marquette U.	MD 1951	1303 S. Phillips Ave., Sioux Falls, S. D.
COSTELLO, Addis Clement	Marquette U.	MD 1951	102-110 2nd Ave. S.W., Rochester, Minn.
COURSLEY, Gerald	U. of Manitoba	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
CUTLER, Edward	Hahnemann Med. Col.	MD 1949	102-110 2nd Ave. S.W., Rochester, Minn.
DANYLUK, Michael	Ludwig Maximilian U., Munich, Germany	MD 1950	837 Med Arts Bldg., Minneapolis, Minn.
DAVIS, Jr., Arthur Emerson	U. of Minnesota	MB 1952	St. Joseph's Hospital, St. Paul, Minn.
DOE, Richard Philip	U. of Minnesota	MB 1951 MD 1952	Vet. Adm. Hospital, Minneapolis, Minn.

DOEHLERT, Jr., Charles Alfred	U. of Pennsylvania	MD 1949	102-110 2nd Ave. S.W., Rochester, Minn.
DUQUETTE, Jacques	U. of Montreal	MD 1949	102-110 2nd Ave. S.W., Rochester, Minn.
EDWARDS, Robert Valentine	U. of Minnesota	MB 1952	St. Joseph's Hospital, St. Paul, Minn.
EELKEMA, Herman Harrison	U. of Minnesota	MB 1952	St. Joseph's Hospital, St. Paul, Minn.
FLOM, Robert Stanley	Northwestern U.	MD 1951	Echo, Minn.
GODDEN, John Oakley	Dalhousie U.	MD 1951	102-110 2nd Ave. S.W., Rochester, Minn.
GOOD, Thomas Arnold	U. of Minnesota	MB 1951 MD 1952	Mpls. Gen. Hospital, Minneapolis, Minn.
GRACE, Joseph Bernard	Northwestern U.	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
HOUTS, Joseph Claude	U. of Minnesota	MB 1951 MD 1952	501 Pleasant Ave., Crookston, Minn.
HUGHES, Robert Alexander	U. of Western Ontario	MD 1948	102-110 2nd Ave. S.W., Rochester, Minn.
JOHNSON, Charles Mabin	U. of Pennsylvania	MD 1951	102-110 2nd Ave. S.W., Rochester, Minn.
KELLEY, John Hoyt	Northwestern U.	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
LEEK, Joseph Hugh	U. of Michigan	MD 1948	205 W. 2nd St., Duluth, Minn.
McCLURE, Jr., Rensselaer Wright	U. of Kansas	MD 1948	102-110 2nd Ave. S.W., Rochester, Minn.
MOLNAR, George Dempster	U. of Alberta	MD 1951	102-110 2nd Ave. S.W., Rochester, Minn.
MOORE, Christopher Halliday	U. of Manitoba	MD 1941	102-110 2nd Ave. S.W., Rochester, Minn.
MURRAY, Gordon MacGregor	Dalhousie U.	MD 1944	Sunnybrook Hospital, Toronto, Ont., Can.
OLSON, Donald Lawrence	U. of Minnesota	MB 1950 MD 1951	Vet. Adm. Hospital, Minneapolis, Minn.
PEAKE, III, Charles Orlando	U. of Pennsylvania	MD 1951	102-110 2nd Ave. S.W., Rochester, Minn.
PORRETTA, Charles Anthony	U. of Michigan	MD 1951	102-110 2nd Ave. S.W., Rochester, Minn.
RICHARDS, Frances Mary Forrest	U. of Alberta	MD 1951	State Hospital, Rochester, Minn.
SHIRAI, Shohei	Col. of Medical Evangelists	MD 1952	1124 Lowry Med. Arts Bldg., St. Paul, Minn.
SWARTZLANDER, Frank Carver	U. of Manitoba	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
TAUB, Robert Golde	Northwestern U.	MD 1951	102-110 2nd Ave. S.W., Rochester, Minn.
WRIGHT, J. Leo	State U. of N. Y.	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.

Reciprocity Candidates

Name	*School*		*Address*
BOREN, James Alan	Northwestern U.	MB 1947 MD 1948	102-110 2nd Ave. S.W., Rochester, Minn.
BURNETT, Joseph William	Hahnemann Med. Col.	MD 1942	618 N. Union, Fergus Falls, Minn.
DAVID, Reuben	U. of Nebraska	MD 1951	732 Chicago Ave., Minneapolis, Minn.
DAWSON, Lorin Drexel	U. of Wisconsin	MD 1942	1653 Med. Arts. Bldg., Mpls., Minn.
DYKSTRA, Peter Calvin	U. of So. Cal.	MD 1952	102-110 2nd Ave. S.W., Rochester, Minn.
FARRAR, Turley	U. of Tennessee	MD 1939	102-110 2nd Ave. S.W., Rochester, Minn.
GACUSANA, Jose Miranda	Creighton U.	MD 1932	Mahnomen, Minn.
GIUSEFFI, Jr., Vincent Joseph	St. Louis U.	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
HEDGES, Jr., Charles Calhoun	U. of California	MD 1949	102-110 2nd Ave. S.W., Rochester, Minn.
HENDRICK, Robert Smith	Tulane U.	MD 1951	102-110 2nd Ave. S.W., Rochester, Minn.
HICKNER, Lawrence Paul	Creighton U.	MD 1947	State Hospital, Rochester, Minn.
JORDAN, Stanley Youngs	Washington U., Mo.	MD 1948	102-110 2nd Ave. S.W., Rochester, Minn.
KLICKA, Karl Sigmund	Western Reserve U.	MD 1937	St. Barnabas Hosp., Minneapolis, Minn.
LINDBERG, Charles Olov	U. of Oklahoma	MD 1924	Grantsburg, Wis.
LONG, Fred Mac	U. of Oklahoma	MD 1951	102-110 2nd Ave. S.W., Rochester, Minn.
MOYER, Leonard Byron	U. of Nebraska	MD 1931	Belgrade, Minn.
PURNELL, Don C.	Indiana U.	MD 1951	102-110 2nd Ave. S.W., Rochester, Minn.
RUSKIN, David Samuel	U. of Michigan	MD 1951	102-110 2nd Ave. S.W., Rochester, Minn.
SCIMECA, William Benvenuto	U. of Kansas	MD 1944	102-110 2nd Ave. S.W., Rochester, Minn.
STORSTEEN, Oliver Matthew	U. of Nebraska	MD 1947	102-110 2nd Ave. S.W., Rochester, Minn.
van VEEN, Francis L.	U. of Oregon	MD 1946	15 Broadway, Sauk Rapids, Minn.
WHISNANT, Jack Page	U. of Arkansas	MD 1951	102-110 2nd Ave. S.W., Rochester, Minn.

National Board Candidates

Name	*School*		*Address*
BRACKETT, Ralph DeRochemont	Harvard U.	MD 1949	102-110 2nd Ave. S.W., Rochester, Minn.
BUMPUS, Frank Thatcher	Tufts Med. Col.	MD 1951	102-110 2nd Ave. S.W., Rochester, Minn.
CALLAHAN, John Anthony	Boston U.	MD 1951	102-110 2nd Ave. S.W., Rochester, Minn.
CHRISTIANSON, Bruce Wilton	U. of Minnesota	MB 1951 MD 1952	102-110 2nd Ave. S.W., Rochester, Minn.
DELANEY, Jr., Leo Thomas	Georgetown U.	MD 1949	102-110 2nd Ave. S.W., Rochester, Minn.
EICHMAN, Peter Liebert	Jefferson Med. Col.	MD 1949	102-110 2nd Ave. S.W., Rochester, Minn.
EVANS, Jr., Eugene Goldsmith	Duke University	MD 1951	102-110 2nd Ave. S.W., Rochester, Minn.
FIELDMAN, Efrem Jay	State U. of New York	MD 1951	102-110 2nd Ave. S.W., Rochester, Minn.
FLETCHER, Grant	Stanford U.	MD 1946	102-110 2nd Ave. S.W., Rochester, Minn.
FOWLER, Ward Scott	Harvard U.	MD 1941	102-110 2nd Ave. S.W., Rochester, Minn.
IVY, Horace Kohman	Northwestern U.	MD 1951	102-110 2nd Ave. S.W., Rochester, Minn.
JOHNSEN, Jr., Henry A.	Col. of Phys. & Surg. Columbia U.	MD 1950	102-110 2nd Ave. S.W., Rochester, Minn.
LUDWIG, Clarence John	Creighton U.	MD 1951	102-110 2nd Ave. S.W., Rochester, Minn.
MAXFIELD, Robert Guion	New York Med. Col.	MD 1946	102-110 2nd Ave. S.W., Rochester, Minn.
MINTZ, Charles Max	Hahnemann Med. Col.	MD 1947	2215 Plymouth Ave. N., Mpls., Minn.
SIMON, Howard Broida	Yale University	MD 1948	102-110 2nd Ave. S.W., Rochester, Minn.
STARR, Grier Forsythe	Northwestern U.	MD 1951	102-110 2nd Ave. S.W., Rochester, Minn.

Minnesota State Medical Association Roster for 1953

Officers

O. J. Campbell, M.D.	*President*	Minneapolis
Justus Ohage, M.D.	*First Vice President*	Saint Paul
C. E. Merkert, M.D.	*Second Vice President*	Minneapolis
B. B. Souster, M.D.	*Secretary*	Saint Paul
W. H. Condit, M.D.	*Treasurer*	Minneapolis
C. G. Sheppard, M.D.	*Speaker, House of Delegates*	Hutchinson
H. M. Carryer, M.D.	*Vice Speaker*	Rochester
R. R. Rosell	*Executive Secretary*	Saint Paul

Councilors

(Terms expire December 31 of year indicated)

First District	
John M. Waugh, M.D. (1953)	Rochester
Second District	
R. C. Hunt, Sr., M.D. (1953)	Fairmont
Third District	
L. G. Smith, M.D. (1955)	Montevideo
Fourth District	
H. J. Nilson, M.D. (1954)	North Mankato
Fifth District	
L. R. Critchfield, M.D. (1955)	Saint Paul
Sixth District	
H. B. Sweetser, M.D. (1954)	Minneapolis
Seventh District	
W. W. Will, M.D. (1955)	Bertha
Eighth District	
C. L. Oppegaard, M.D. (1954)	Crookston
Ninth District	
A. O. Swenson, M.D. (1953), *Chairman*	Duluth

House of Delegates, American Medical Association

(Terms expire December 31 of year indicated)

Members	
J. Arnold Bargen, M.D. (1954)	Rochester
O. J. Campbell, M.D. (1953)	Minneapolis
George Earl, M.D. (1953)	Saint Paul
*F. J. Elias, M.D.	Duluth

Alternates	
Paul C. Leck, M.D. (1954)	Austin
W. W. Will, M.D. (1953)	Bertha
E. M. Hammes, Sr., M.D. (1953)	Saint Paul
*J. F. DuBois, M.D.	Saint Paul

*(*Terms expired December 31, 1952)*

Scientific Committees

COMMITTEE ON SCIENTIFIC ASSEMBLY

O. J. Campbell, M.D., *General Chairman*	Duluth
Roger L. J. Kennedy, M.D.	Rochester
R. R. Rosell	Saint Paul
Section on Medicine	
P. G. Boman, M.D., *Chairman*	Duluth
R. L. Page, M.D., *Secretary*	St. Charles
Section on Specialties	
F. L. Schade, M.D., *Chairman*	Worthington
C. A. Good, Jr., M.D., *Secretary*	Rochester
Section on Surgery	
L. C. Culligan, M.D., *Chairman*	Minneapolis
C. E. Rea, M.D., *Secretary*	Saint Paul
Local Arrangements	
Vernon D. E. Smith, M.D., *Chairman*	Saint Paul

ANESTHESIOLOGY

R. C. Adams, M.D.	Rochester
J. W. Baird, M.D.	Minneapolis
J. H. Crowley, M.D.	Saint Paul
R. T. Knight, M.D.	Minneapolis
R. C. Knutson, M.D.	Saint Paul
K. E. Latterell, M.D.	Duluth
T. H. Seldon, M.D.	Rochester

BLOOD AND BLOOD BANKS

J. S. Lundy, M.D.	Rochester
Paul F. Dwan, M.D.	Minneapolis
J. W. Edwards, M.D.	Saint Paul
E. V. Goltz, M.D.	Saint Paul
Wm. V. Knoll, M.D.	Duluth
R. W. Koucky, M.D.	Minneapolis
N. C. Plimpton, Jr., M.D.	Minneapolis

BRUCELLOSIS

W. W. Spink, M.D.	Minneapolis
James J. Coll, M.D.	Duluth
Dean S. Fleming, M.D.	Hopkins
W. A. Merritt, M.D.	Rochester
R. A. Nelson, M.D.	Fergus Falls

CANCER

(Three-year appointment)

A. H. Wells, M.D. (1953)	Duluth
David P. Anderson, Jr., M.D. (1955)	Austin
Herbert Boysen, M.D. (1955)	Madelia
Dean S. Fleming, M.D. (1953)	Hopkins
Merriam G. Fredricks, M.D. (1953)	Duluth
E. C. Hartley, M.D. (1955)	Saint Paul
N. K. Jensen, M.D. (1954)	Minneapolis
James A. Johnson, M.D. (1954)	Minneapolis
N. Logan Leven, M.D. (1953)	Saint Paul
T. B. Magath, M.D. (1953)	Rochester
R. A. Rossberg, M.D. (1954)	Morris
C. G. Uhley, M.D. (1954)	Crookston

CHILD HEALTH

G. B. Logan, M.D.	Rochester
S. L. Arey, M.D.	Minneapolis
T. C. Chisholm, M.D.	Minneapolis
F. G. Hedenstrom, M.D.	Saint Paul
O. H. Jones, M.D.	Mankato
R. E. Nutting, M.D.	Duluth
W. B. Richards, M.D.	Saint Cloud
L. F. Richdorf, M.D.	Minneapolis
A. B. Rosenfield, M.D.	Minneapolis
V. O. Wilson, M.D.	Rochester

CHRONIC ILLNESS

E. L. Tuohy, M.D.	Duluth
C. A. Anderson, M.D.	Hector
F. W. Conley, M.D.	Duluth
A. J. Greenberg, M.D.	Minneapolis
John A. Lepak, M.D.	Saint Paul
C. W. Leverenz, M.D.	Saint Paul
Daniel F. McCann, M.D.	Bemidji
Arthur Neumaier, M.D.	Glencoe
J. F. Norman, M.D.	Crookston
W. A. Piper, M.D.	Mountain Lake

DIABETES

J. R. Meade, M.D.	Saint Paul
Moses Barron, M.D.	Minneapolis
J. J. Coll, M.D.	Duluth
J. A. Lepak, M.D.	Saint Paul
J. K. Moen, Jr., M.D.	Minneapolis
W. S. Neff, M.D.	Virginia
B. F. Pearson, M.D.	Shakopee
E. H. Rynearson, M.D.	Rochester
R. V. Sherman, M.D.	Red Wing
C. W. Vandersluis, M.D.	Bemidji

FIRST AID AND RED CROSS

J. S. Lundy, M.D.	Rochester
E. R. Anderson, M.D.	Minneapolis
G. I. Badeaux, M.D.	Brainerd
J. W. Edwards, M.D.	Saint Paul
E. M. Elsey, M.D.	Glenwood
B. A. Fiesche, M.D.	Lake City
G. H. Goehrs, M.D.	Saint Cloud
E. V. Goltz, M.D.	Saint Paul
Wm. V. Knoll, M.D.	Duluth
R. W. Koucky, M.D.	Minneapolis
N. C. Plimpton, Jr., M.D.	Minneapolis
R. S. Ylvisaker, M.D.	Minneapolis

FRACTURES

E. T. Evans, M.D.	Minneapolis
N. H. Baker, M.D.	Fergus Falls
W. H. Cole, M.D.	Saint Paul
B. C. Ford, M.D.	Marshall
R. K. Ghormley, M.D.	Rochester
V. P. Hauser, M.D.	Saint Paul
W. J. McDonald, M.D.	Crookston
J. H. Moe, M.D.	Minneapolis
M. J. Nydahl, M.D.	Minneapolis
J. F. Schaefer, M.D.	Owatonna
W. A. Swedberg, M.D.	Duluth
J. A. Thabes, Jr., M.D.	Brainerd

GENERAL PRACTICE

R. H. Creighton, M.D.	Minneapolis
E. C. Bayley, M.D.	Lake City
James A. Blake, M.D.	Hopkins
R. M. Burns, M.D.	Saint Paul
Donald C. Deters, M.D.	Saint Paul
C. S. Donaldson, M.D.	Foley
R. J. Eckman, M.D.	Duluth
W. E. Hart, M.D.	Monticello
Roger G. Hassett, M.D.	Mankato
W. W. Rieke, M.D.	Wayzata
C. H. Sherman, M.D.	Bayport

HEARING, CONSERVATION OF

L. R. Boies, M.D.	Minneapolis
John H. Cameron, M.D.	Crookston
C. E. Connor, M.D.	Saint Paul
J. B. Gaida, M.D.	Saint Cloud
Anderson Hilding, M.D.	Duluth
Conrad J. Holmberg, M.D.	Minneapolis
K. M. Simonton, M.D.	Rochester
J. Donald Sjoding, M.D.	Mankato

HEART

(Three-year appointment)

F. J. Hirschboeck, M.D. (1954)	Duluth
J. F. Borg, M.D. (1954)	Saint Paul
J. F. Briggs, M.D. (1953)	Saint Paul
Hendrik DeKruif, M.D. (1955)	Fergus Falls
Paul F. Dwan, M.D. (1955)	Minneapolis
C. N. Hensel, M.D. (1955)	Saint Paul
M. M. Hurwitz, M.D. (1953)	Saint Paul
R. O. Sather, M.D. (1954)	Crookston
H. L. Smith, M.D. (1954)	Rochester
D. W. Wheeler, M.D. (1954)	Duluth
Asher White, M.D. (1955)	Minneapolis

HISTORICAL

Robert Rosenthal, M.D.	Saint Paul
Richard Bardon, M.D.	Duluth
W. F. Braasch, M.D.	Rochester
Carl Fritsche, M.D.	New Ulm
R. C. Hunt, M.D.	Fairmont
A. G. Liedloff, M.D.	Mankato
O. F. Mellby, M.D.	Thief River Falls
Thos. A. Peppard, M.D.	Minneapolis
G. E. Sherwood, M.D.	Kimball
A. M. Watson, M.D.	Royalton
W. E. Wilson, M.D.	Northfield

HOSPITALS AND MEDICAL EDUCATION

H. S. Diehl, M.D.	Minneapolis
T. E. Broadie, M.D.	Saint Paul
H. R. Butt, M.D.	Rochester
B. C. Ford, M.D.	Marshall
R. F. Hedin, M.D.	Red Wing
A. C. Kerkhoff, M.D.	Minneapolis
H. A. Korda, M.D.	Pelican Rapids
Arnold Larson, M.D.	Detroit Lakes
J. P. Medelman, M.D.	Saint Paul
W. H. Valentine, M.D.	Tracy
H. J. Walder, M.D.	Duluth

INDUSTRIAL HEALTH

L. S. Arling, M.D.	Minneapolis
Tracy E. Barber, Jr., M.D.	Austin
C. C. Bell, M.D.	Saint Paul
E. E. Christensen, M.D.	Winona
H. B. Clark, M.D.	Saint Cloud
Clarence Jacobson, M.D.	Chisholm
T. A. Lowe, M.D.	South Saint Paul
Robert F. McGandy, M.D.	Minneapolis
O. L. McHaffie, M.D.	Duluth
J. R. McNutt, M.D.	Duluth
John F. Shronts, M.D.	Minneapolis
H. H. Young, M.D.	Rochester
L. W. Foker, M.D.	Minneapolis

MATERNAL HEALTH

J. J. Swendson, M.D.	Saint Paul
P. N. Bray, M.D.	Duluth
C. J. Ehrenberg, M.D.	Minneapolis
O. B. Fesenmaier, M.D.	New Ulm
G. F. Hartnagel, M.D.	Red Wing
E. R. Hudec, M.D.	Echo
A. B. Hunt, M.D.	Rochester
J. L. McKelvey, M.D.	Minneapolis
W. F. Mercil, M.D.	Crookston
A. B. Rosenfield, M.D.	Minneapolis
F. L. Schade, M.D.	Worthington
F. J. Schatz, M.D.	Saint Cloud

MEDICAL TESTIMONY

E. M. Hammes, Sr., M.D.	Saint Paul
B. S. Adams, M.D.	Hibbing
Markham B. Coventry, M.D.	Rochester
Gordon MacRae, M.D.	Duluth
S. R. Maxeiner, M.D.	Minneapolis
L. H. Rutledge, M.D.	Detroit Lakes
W. G. Workman, M.D.	Tracy

MILITARY AFFAIRS

J. H. Tillisch, M.D.	Rochester
E. G. Benjamin, M.D.	Minneapolis
Floyd M. Burns, M.D.	Milan
Luther F. Davis, M.D.	Wadena
K. E. Johnson, M.D.	Duluth
Donald McCarthy, M.D.	Saint Paul
Fred H. Magney, M.D.	Duluth
N. C. Plimpton, Jr., M.D.	Minneapolis
W. P. Ritchie, M.D.	Saint Paul
Joseph M. Ryan, M.D.	Saint Paul
John T. Smiley, M.D.	Minneapolis
A. K. Stratte, M.D.	Pine City
Asher A. White, M.D.	Minneapolis

NERVOUS AND MENTAL DISEASES

W. P. Gardner, M.D.	Saint Paul
Joe R. Brown, M.D.	Rochester
S. A. Challman, M.D.	Minneapolis
R. C. Gray, M.D.	Minneapolis
B. P. Grimes, M.D.	Saint Peter
J. E. T. Haavik, M.D.	Duluth
E. M. Hammes, Jr., M.D.	Saint Paul
W. H. Hengstler, M.D.	Saint Paul
W. L. Patterson, M.D.	Fergus Falls

OPHTHALMOLOGY

T. R. Fritsche, M.D.	New Ulm
A. F. Adair, Jr., M.D.	Saint Paul
F. P. Frisch, M.D.	Willmar
E. W. Hansen, M.D.	Minneapolis
Hobart C. Johnson, M.D.	North Mankato
F. N. Knapp, M.D.	Duluth
C. L. Oppegaard, M.D.	Crookston
C. W. Rucker, M.D.	Rochester
Andrew Sinamark, M.D.	Hibbing
C. E. Stanford, M.D.	Minneapolis
W. T. Wenner, M.D.	Saint Cloud

PUBLIC HEALTH NURSING

M. McC. Fischer, M.D.	Duluth
F. S. Babb, M.D.	Saint Paul
W. C. Chambers, M.D.	Blue Earth
L. F. Davis, M.D.	Wadena
J. N. Libert, M.D.	Saint Cloud
C. E. Merkert, M.D.	Minneapolis
T. W. Stransky, M.D.	Owatonna

SYPHILIS AND SOCIAL DISEASES

H. G. Irvine, M.D.	Minneapolis
John A. Butzer, M.D.	Mankato
W. E. Hatch, M.D.	Duluth
F. W. Lynch, M.D.	Saint Paul
H. E. Michelson, M.D.	Minneapolis
C. W. Moberg, M.D.	Detroit Lakes
P. A. O'Leary, M.D.	Rochester
J. F. Schmid, M.D.	Duluth
S. E. Sweitzer, M.D.	Minneapolis

TUBERCULOSIS

J. F. Briggs, M.D., *Chairman*	Saint Paul
J. A. Myers, M.D., *Vice Chairman*	Minneapolis
R. N. Barr, M.D.	Minneapolis
Ruth E. Boynton, M.D.	Minneapolis
F. F. Callahan, M.D.	Saint Paul
S. S. Cohen, M.D.	Oak Terrace
Coleman Connolly, M.D.	Saint Paul
D. S. Fleming, M.D.	Minneapolis
Russell H. Frost, M.D.	Oak Terrace
Robert E. Hansen, M.D.	Rochester
G. A. Hedberg, M.D.	Nopeming
Corrin H. Hodgson, M.D.	Rochester
L. S. Jordan, M.D.	Granite Falls
T. J. Kinsella, M.D.	Minneapolis
Elizabeth A. Leggett, M.D.	Bemidji
E. A. Meyerding, M.D.	Saint Paul
W. O. B. Nelson, M.D.	Fergus Falls
W. E. Peterson, M.D.	Willmar
C. G. Sheppard, M.D.	Hutchinson
S. A. Slater, M.D.	Worthington
W. H. Ude, M.D.	Minneapolis

VACCINATION AND IMMUNIZATION

R. N. Barr, M.D.	Minneapolis
E. E. Barrett, M.D.	Duluth
A. J. Chesley, M.D.	Saint Paul
W. W. Higgs, M.D.	Park Rapids
C. O. Kohlbry, M.D.	Duluth
George B. Logan, M.D.	Rochester
L. F. Richdorf, M.D.	Minneapolis
R. B. J. Schoch, M.D.	Saint Paul
C. S. Strathern, M.D.	Saint Peter
R. L. Wilder, M.D.	Minneapolis

Non-Scientific Committees

EDITING AND PUBLISHING

E. M. Hammes, Sr., M.D. (1956)	Saint Paul
P. F. Donohue, M.D. (1953)	Saint Paul
L. M. Eaton, M.D. (1954)	Rochester
J. J. Heimark, M.D. (1956)	Fairmont
Henry J. Moehring, M.D. (1957)	Duluth
C. L. Oppegaard, M.D. (1955)	Crookston
T. A. Peppard, M.D. (1957)	Minneapolis
H. A. Roust, M.D. (1953)	Montevideo
H. L. Ulrich, M.D. (1955)	Minneapolis
A. H. Wells, M.D. (1954)	Duluth

HOSPITALS AND PROFESSIONAL RELATIONS

J. Minott Stickney, Jr., M.D.	Rochester
George A. Earl, M.D.	Saint Paul
C. Allen Good, M.D.	Rochester
Kano Ikeda, M.D.	Saint Paul
F. C. Jacobson, M.D.	Duluth
T. J. Kinsella, M.D.	Minneapolis
Glenn Mouritsen, M.D.	Fergus Falls
C. G. Sheppard, M.D.	Hutchinson

INSURANCE LIAISON

Clarence Jacobson, M.D.	Chisholm
John Dordal, M.D.	Sacred Heart
P. W. Harrison, M.D.	Worthington
V. P. Hauser, M.D.	Saint Paul
Corrin Hodgson, M.D.	Rochester
Carl O. Rice, M.D.	Minneapolis
A. H. Zachman, M.D.	Melrose

INTERPROFESSIONAL RELATIONS

W. P. Gardner, M.D.	Saint Paul
M. J. Anderson, M.D.	Rochester
E. E. Christensen, M.D.	Winona
H. G. Bosland, M.D.	Willmar
C. O. Estrem, M.D.	Fergus Falls
K. R. Fawcett, M.D.	Duluth
M. I. Hauge, M.D.	Clarkfield
J. M. Hayes, M.D.	Minneapolis
R. F. Hedin, M.D.	Red Wing
Arthur Neumaier, M.D.	Glencoe

MEDICAL ECONOMICS

George Earl, M.D., *General Chairman*	Saint Paul

Executive Committee

George Earl, M.D.	Saint Paul
Harry Klein, M.D.	Duluth
F. J. Elias, M.D.	Morgan Park, Duluth
W. H. Hengstler, M.D.	Saint Paul
Clarence Jacobson, M.D.	Chisholm
C. E. Proshek, M.D.	Minneapolis
L. L. Sogge, M.D.	Windom

Editorial Committee

George Earl, M.D.	Saint Paul
W. F. Braasch, M.D.	Rochester
W. L. Patterson, M.D.	Fergus Falls
H. F. R. Plass, M.D.	Minneapolis
D. W. Wheeler, M.D.	Duluth

Medical Advisory Committee

W. H. Hengstler, M.D.	Saint Paul
P. G. E. Hoeper, M.D.	Mankato
G. C. MacRae, M.D.	Duluth
Ivar Sivertsen, M.D.	Minneapolis

Medical Ethics

Harry Klein, M.D.	Duluth
H. S. Diehl, M.D.	Minneapolis
P. E. Hermanson, M.D.	Hendricks
John E. Holt, M.D.	Saint Paul
Harry M. Weber, M.D.	Rochester

Medical Service

J. A. Bargen, M.D.	Rochester
F. S. Babb, M.D.	Saint Paul
Tague C. Chisholm, M.D.	Minneapolis
C. H. Holmstrom, M.D.	Warren
B. G. Lannin, M.D.	Saint Paul
C. B. McKaig, M.D.	Pine Island
R. A. Murray, M.D.	Hibbing
James P. O'Keefe, M.D.	Saint Cloud
George E. Penn, M.D.	Mankato
H. F. R. Plass, M.D.	Minneapolis
E. J. Simons, M.D.	Minneapolis
M. O. Wallace, M.D.	Duluth

Membership Committee

H. F. R. Plass, M.D.	Minneapolis
H. M. Carryer, M.D.	Rochester
L. D. Hilger, M.D.	Saint Paul
P. J. Pankrantz, M.D.	Mountain Lake
M. O. Wallace, M.D.	Duluth

State Health Relations

C. E. Proshek, M.D.	Minneapolis
E. C. Bayley, M.D.	Lake City
R. P. Buckley, M.D.	Duluth
C. S. Donaldson, M.D.	Foley
John Earl, M.D.	Saint Paul
J. J. Eusterman, M.D.	Mankato
Raymond J. Jackman, M.D.	Rochester
D. L. Johnson, M.D.	Little Falls
C. N. McCloud, Jr., M.D.	Saint Paul
W. S. Neff, M.D.	Virginia
John T. Pewters, M.D.	Minneapolis
Carl Simison, M.D.	Barnesville
C. E. Wilson, M.D.	Blue Earth

MINNESOTA STATE CERTIFICATION BOARD ON PUBLIC HEALTH NURSING

Mario M. Fischer, M.D.	Duluth

PUBLIC HEALTH EDUCATION

F. J. Elias, M.D., *General Chairman*	Duluth

Executive Committee

F. J. Elias, M.D.	Duluth
R. M. Burns, M.D.	Saint Paul
Haddon M. Carryer, M.D.	Rochester
C. B. Drake, M.D.	Saint Paul
L. L. Sogge, M.D.	Windom

(And Chairmen of all Scientific Committees)

Editorial

C. B. Drake, M.D.	Saint Paul
K. W. Anderson, M.D.	Minneapolis
G. W. Clifford, M.D.	Alexandria
T. J. Edwards, M.D.	Saint Paul
Gordon M. Erskine, M.D.	Grand Rapids
H. W. Schmidt, M.D.	Rochester

Radio

R. M. Burns, M.D.	Saint Paul
Elizabeth C. Bagley	Duluth
C. N. Harris, M.D.	Hibbing
E. A. Heiberg, M.D.	Fergus Falls
R. N. Jones, M.D.	Saint Cloud
L. R. Prins, M.D.	Albert Lea
A. A. Schmitz, M.D.	Mankato
W. E. Wellman, M.D.	Rochester
R. H. Wilson, M.D.	Winona

Speakers' Bureau

H. M. Carryer, M.D.	Rochester
J. F. Briggs, M.D.	Saint Paul
W. D. Coventry, M.D.	Duluth
J. W. Duncan, M.D.	Moorhead
P. J. Hiniker, M.D.	Le Sueur
P. A. Lommen, M.D.	Austin
L. N. Dale, M.D.	Red Lake Falls
W. B. Wells, M.D.	Jackson
Harold E. Wilmot, M.D.	Litchfield

PUBLIC POLICY COMMITTEE

L. L. Sogge, M.D., *Acting Chairman*	Windom
G. I. Badeaux, M.D.	Brainerd
James A. Blake, Jr., M.D.	Hopkins
J. A. Bargen, M.D.	Rochester
Clarence Jacobson, M.D.	Chisholm
Vilhelm M. Johnson, M.D.	Dawson
E. J. Kaufman, M.D.	Appleton
M. E. L. Lenander, M.D.	St. Peter
J. N. Libert, M.D.	St. Cloud
A. E. Ritt, M.D.	Saint Paul

RURAL MEDICAL SERVICE

First District

Paul C. Leck, M.D., *Chairman*	Austin

Second District

V. W. Doman, M.D.,	Lakefield

Third District

Magnus Westby, M.D.	Madison

Fourth District

L. E. Sjostrom, M.D.	Saint Peter

Fifth District

A. K. Stratte, M.D.	Pine City

Sixth District

W. W. Rieke, M.D.	Wayzata

Seventh District

D. L. Johnson, M.D.	Little Falls

Eighth District

C. W. Jacobson, M.D.	Breckenridge

Ninth District

J. K. Butler, M.D.	Cloquet

UNIVERSITY RELATIONS

R. L. J. Kennedy, M.D., *Chairman*	Rochester
O. J. Campbell, M.D.	Minneapolis
R. H. Creighton, M.D.†	Minneapolis
F. J. Elias, M.D.	Morgan Park, Duluth
E. M. Hammes, Sr., M.D.	Saint Paul

VETERANS MEDICAL SERVICE

R. H. Creighton, M.D.	Minneapolis
S. H. Boyer, Jr., M.D.	Duluth
C. J. Fritsche, M.D.	New Ulm
W. P. Ritchie, M.D.	Saint Paul
C. A. Wilmot, M.D.	Litchfield

---

†Represents General Practitioners.

County Medical Advisory Committees

STATE WIDE ADVISORY COMMITTEE TO DIVISION OF SOCIAL WELFARE

Rolland H. Wilson, M.D., *Chairman*	Winona
Haddon Carryer, M.D.	Rochester
O. M. Heiberg, M.D.	Worthington
Douglas L. Johnson, M.D.	Little Falls
Karl E. Johnson, M.D.	Duluth
J. P. Medelman, M.D.	Saint Paul
E. W. Lippmann, M.D.	Hutchinson
C. W. Moberg, M.D.	Detroit Lakes
I. L. Oliver, M.D.	Graceville
Robert Priest, M.D.	Minneapolis

AITKIN COUNTY

F. C. Closuit	Aitkin
H. T. Petraborg	Aitkin

ANOKA COUNTY

R. J. Spurzem	Anoka
B. W. Bunker	Anoka
E. W. Miller	Anoka

BECKER COUNTY

H. C. Otto	Frazee
W. C. Dodds	Detroit Lakes
Arnold Larson	Detroit Lakes

BELTRAMI COUNTY

D. H. Garlock	Bemidji
T. P. Groschupf	Bemidji
D. D. Whittemore	Bemidji

BENTON COUNTY

William Friesleben	Sauk Rapids
C. S. Donaldson	Foley
N. F. Musachio	Foley

BIG STONE COUNTY

I. L. Oliver	Graceville
Otto Bergan	Clinton
D. M. O'Donnell	Ortonville

CHISAGO COUNTY

J. E. Halpin	Rush City
A. E. Holmes	Rush City
R. G. Swenson	North Branch

CLAY COUNTY

Allan E. Moe	Moorhead
O. H. Johnson	Moorhead
J. W. Duncan	Moorhead

CLEARWATER COUNTY

L. J. Larson	Bagley
W. E. Anderson	Clearbrook

COOK COUNTY

W. R. Smith	Grand Marais

COTTONWOOD COUNTY

H. C. Stratte	Windom
E. S. Schutz	Mountain Lake
J. V. Carlson	Westbrook

CROW WING COUNTY

V. E. Quanstrom	Brainerd
G. I. Badeaux	Brainerd
J. B. Nixon	Crosby

DAKOTA COUNTY

A. H. Field	Farmington
Paul G. Polski	South St. Paul

DODGE COUNTY

C. E. Bigelow	Dodge Center
D. E. Affeldt	Kasson
R. L. Baker	Hayfield

DOUGLAS COUNTY

G. W. Clifford	Alexandria
L. M. Boyd	Alexandria

FARIBAULT COUNTY

W. C. Chambers	Blue Earth
M. D. Cooper	Winnebago
W. H. Barr	Wells

FILLMORE COUNTY

H. M. Skaug	Chatfield
L. W. Clark	Spring Valley

FREEBORN COUNTY

C. E. J. Nelson	Albert Lea
L. E. Steiner	Albert Lea
J. P. Person	Albert Lea
A. G. Sherman	Albert Lea

GOODHUE COUNTY

W. W. Liffrig	Red Wing
R. B. Graves	Red Wing
G. F. Hartnagel	Red Wing

GRANT COUNTY

L. R. Parson	Elbow Lake
E. T. Reeve	Elbow Lake
A. M. Randall	Ashby

RURAL HENNEPIN COUNTY

W. W. Rieke	Wayzata
H. E. Drill	Hopkins
E. J. Lillehei	Robbinsdale

HOUSTON COUNTY

N. T. Norris	Caledonia
L. K. Onsgard	Houston
L. A. Knutson	Spring Grove

HUBBARD COUNTY

Donald Houston	Park Rapids
W. W. Higgs	Park Rapids
John Eiler	Park Rapids

ISANTI COUNTY

W. T. Nygren	Braham
R. J. Gully	Cambridge
G. E. Larson	Cambridge

ITASCA COUNTY

E. K. Rowles	Coleraine
G. M. Erskine	Grand Rapids
M. J. McKenna	Grand Rapids

JACKSON COUNTY

J. T. Rose	Lakefield
H. A. Christensen	Jackson
W. H. Halloran	Jackson

KANABEC COUNTY

C. S. Bossert	Mora
W. F. Nordman	Mora
Harry L. Berge	Mora

KANDIYOHI COUNTY

H. G. Bosland	Willmar
R. P. Michels	Willmar

BLUE EARTH COUNTY

R. N. Andrews	Mankato
R. G. Hassett	Mankato
J. C. Vezina	Mapleton

BROWN-REDWOOD-WATONWAN COUNTIES

C. A. Saffert	New Ulm
Albert Fritsche	New Ulm
E. J. Wohlrabe	Springfield
O. B. Fesenmaier	New Ulm
A. P. Goblirsch	Sleepy Eye

CARLTON COUNTY

J. K. Butler	Cloquet
R. M. Eppard	Cloquet
E. O. Hanson	Carlton

CARVER COUNTY

M. B. Hebeisen	Chaska
B. H. Simons	Chaska
R. E. Pogue	Watertown

CASS COUNTY

O. F. Ringle	Walker
C. H. Coombs	Cass Lake

CHIPPEWA COUNTY

L. G. Smith	Montevideo
H. A. Roust	Montevideo
L. R. Lima	Montevideo
M. A. Burns	Milan

KITTSON COUNTY

G. A. Knutson	Hallock
A. S. Berlin	Hallock
R. B. Skogerboe	Karlstad

KOOCHICHING COUNTY

R. A. MacDonald	Littlefork
R. D. Hanover	International Falls
C. C. Craig	International Falls

LAC QUI PARLE COUNTY

V. M. Johnson	Dawson
Magnus Westby	Madison

LAKE COUNTY

Ralph Papermaster	Two Harbors

LAKE OF THE WOODS COUNTY

A. A. Brink	Baudette

LINCOLN COUNTY

A. L. Vadheim	Tyler
P. E. Hermanson	Hendricks
George Friedell	Ivanhoe

LYON COUNTY

B. C. Ford	Marshall
W. G. Workman	Tracy
W. W. Yaeger	Marshall

MAHNOMEN COUNTY

K. W. Covey	Mahnomen
K. A. Danford	Mahnomen

MARSHALL COUNTY

A. E. Carlson	Warren
C. H. Holmstrom	Warren

MARTIN COUNTY

R. C. Hunt	Fairmont
O. E. Wandke	Fairmont
E. A. Thayer	Fairmont
C. W. Krause	Fairmont

MCLEOD COUNTY

H. H. Holm	Glencoe
A. M. Jensen	Brownton
E. W. Lippmann	Hutchinson

MEEKER COUNTY

C. A. Wilmot	Litchfield
Lennox Danielson	Litchfield
David D. Allison	Litchfield

MILLE LACS COUNTY

W. R. Blomberg	Princeton
A. T. Kapsner	Princeton
N. B. Metcalf	Onamia

MORRISON COUNTY

D. L. Johnson	Little Falls
A. M. Watson	Royalton

MOWER COUNTY

R. R. Wright	Austin
S. C. Peterson	Austin

MURRAY COUNTY

B. M. Stevenson	Fulda
R. F. Pierson	Slayton
H. D. Patterson	Slayton

NICOLLET-LE SUEUR COUNTY

G. C. Wilcox	Saint Peter
H. C. Johnson	North Mankato
M. E. Lenander	Saint Peter

NOBLES COUNTY

E. W. Arnold	Adrian
E. A. Kilbride	Worthington
C. R. Stanley	Worthington

NORMAN COUNTY

Eskil Erickson	Halstad
Theodore Loken	Ada
Bruce Boynton	Ada

OLMSTED COUNTY

H. F. Polley	Rochester
T. O. Wellner	Rochester
C. B. McKaig	Pine Island

OTTER TAIL COUNTY

Charles Lewis	Henning
Frank Naegeli	Fergus Falls
H. K. Helseth	Pelican Rapids

PENNINGTON COUNTY

O. F. Mellby	Thief River Falls
T. E. Bratrud	Thief River Falls
M. D. Starekow	Thief River Falls

PINE COUNTY

A. K. Stratte	Pine City
E. G. Hubin	Sandstone
H. P. Dredge	Sandstone

PIPESTONE COUNTY

W. G. Benjamin	Pipestone
J. G. Lohmann	Pipestone
G. Beckering	Edgerton

POLK COUNTY

George Sather	Fosston
O. K. Behr	Crookston
C. G. Uhley	Crookston

POPE COUNTY

E. M. Elsey	Glenwood
Paul Swedenberg	Glenwood
A. F. Giesen	Starbuck

RAMSEY COUNTY

A. G. Schulze	Saint Paul
T. S. McClanahan	White Bear Lake
Earl Black	Saint Paul

RED LAKE COUNTY

L. N. Dale	Red Lake Falls
A. M. McKaig	Red Lake Falls

RENVILLE COUNTY

J. Dordal	Sacred Heart
S. F. Ceplecha	Redwood Falls
E. C. Gaines	Buffalo Lake

RICE COUNTY

D. W. Francis	Morristown
P. H. Weaver	Faribault
Warren Wilson	Northfield

ROCK COUNTY

C. L. Sherman	Luverne
A. C. Martin	Luverne
F. W. Bofenkamp	Luverne

ROSEAU COUNTY

J. L. Delmore, Sr.	Roseau
D. O. Berge	Roseau
K. L. Nelson	Warroad
L. Klefstad	Greenbush

ST. LOUIS COUNTY

J. K. Butler	Cloquet
M. G. Fredricks	Duluth
H. J. Jeronimus	Duluth

SCOTT COUNTY

H. M. Juergens	Belle Plaine
B. F. Pearson	Shakopee
F. P. Kortsch	Prior Lake

SHERBURNE COUNTY

E. F. Clothier	Elk River
A. B. Roehlke	Elk River
G. H. Tesch	Elk River

SIBLEY COUNTY

Rolf Hovde	Winthrop
Thomas Martin	Arlington
D. C. Olson	Gaylord

STEARNS COUNTY

R. N. Jones	Saint Cloud
C. F. Brigham, Sr.	Saint Cloud
K. A. Walfred	Saint Cloud

STEELE COUNTY

D. H. Dewey	Owatonna
O. W. Roberts	Owatonna
J. F. Arnesen	Owatonna

STEVENS COUNTY

M. L. Ransom	Hancock
R. A. Rossberg	Morris
A. I. Arneson	Morris

SWIFT COUNTY

Ed. J. Kaufman	Appleton
R. P. Griffin	Benson
B. C. Ostling	Kerkhoven

TODD COUNTY

M. E. Mosby	Long Prairie
J. M. Cook	Staples
C. B. Will	Bertha

TRAVERSE COUNTY

A. L. Lindberg	Wheaton
A. E. Magnuson	Wheaton
W. F. Muir	Browns Valley

WABASHA COUNTY

C. G. Ochsner	Wabasha
E. C. Bayley	Lake City
E. W. Ellis	Elgin

WADENA COUNTY

L. T. Davis	Wadena
C. H. Pierce	Wadena
W. E. Parker	Sebeka

WASECA COUNTY

G. H. Olds	New Richland
H. M. McIntire	Waseca
B. J. Gallagher	Waseca

WASHINGTON COUNTY

W. R. Humphrey	Stillwater
Russell E. Carlson	Stillwater

WILKIN COUNTY

W. E. Wray	Campbell

WINONA COUNTY

R. H. Wilson	Winona
R. B. Tweedy	Winona
Herbert Heise	Winona

WRIGHT COUNTY

John J. Catlin	Buffalo
C. L. Roholt	McIntosh

YELLOW MEDICINE COUNTY

R. H. Kath	Arlington
Carl Lundell	Granite Falls
E. R. Hudec	Echo

Councilor Districts

First District

J. M. Waugh, M.D. .... Rochester

Counties—Dodge, Fillmore, Freeborn, Goodhue, Houston, Mower, Olmsted, Rice, Steele, Wabasha, Winona

Second District

R. C. Hunt, Sr., M.D. .... Fairmont

Counties—Cottonwood, Faribault, Jackson, Martin, Murray, Nobles, Pipestone, Rock, Watonwan

Third District

L. G. Smith, M.D. .... Montevideo

Counties—Big Stone, Chippewa, Kandiyohi, Lac Qui Parle, Lincoln, Lyon, Meeker, Pope, Redwood, Renville, Stevens, Swift, Traverse, Yellow Medicine

Fourth District

H. J. Nilson, M.D. .... North Mankato

Counties—Blue Earth, Brown, Carver, Le Sueur, McLeod, Nicollet, Scott, Sibley, Waseca

Fifth District

L. R. Critchfield, M.D. .... Saint Paul

Counties—Anoka, Chisago, Dakota, Isanti, Kanabec, Mille Lacs, Pine, Ramsey, Sherburne, Washington

Sixth District

H. B. Sweetser, Jr. .... Minneapolis

Counties—Hennepin, Wright

Seventh District

W. W. Will, M.D. .... Bertha

Counties—Aitkin, Beltrami, Benton, Cass, Clearwater, Crow Wing, Hubbard, Koochiching, Morrison, Stearns, Todd, Wadena

Eighth District

C. L. Oppegaard, M.D. .... Crookston

Counties—Becker, Clay, Douglas, Grant, Kittson, Lake of the Woods, Mahnomen, Marshall, Norman, Otter Tail, Pennington, Polk, Red Lake, Roseau, Wilkin

Ninth District

A. O. Swenson, M.D. .... Duluth

Counties—Carlton, Cook, Itasca, Lake, St. Louis

Woman's Auxiliary to the Minnesota State Medical Association

Officers

Mrs. Henry W. Quist, Sr.	*President*	Minneapolis
Mrs. P. S. Rudie	*President-Elect*	Duluth
Mrs. C. L. Sheedy	*Past President*	Austin
Mrs. C. L. Oppegaard	*First Vice President*	Crookston
Mrs. Andrew Christiansen	*Second Vice President*	Saint Paul
Mrs. L. P. Howell	*Third Vice President*	Rochester
Mrs. O. J. Campbell	*Fourth Vice President*	Minneapolis
Mrs. David Halpern	*Recording Secretary*	Brewster
Mrs. L. J. Leonard	*Corresponding Secretary*	Minneapolis
Mrs. Charles Froats	*Treasurer*	Saint Paul
Mrs. J. K. Butler	*Auditor*	Cloquet
Mrs. Harry Klein	*Historian*	Duluth
Mrs. Leo Fink	*Parliamentarian*	Minneapolis

Regional Advisors

Mrs. Viktor Wilson	*First District*	Rochester
Mrs. O. M. Heiberg	*Second District*	Worthington
Mrs. T. R. Fritsche	*Third District*	New Ulm
Mrs. John Dordal	*Fourth District*	Sacred Heart
Mrs. Charles W. Waas	*Fifth District*	Saint Paul
Mrs. Ralph Creighton	*Sixth District*	Minneapolis
Mrs. J. C. Buscher	*Seventh District*	St. Cloud
Mrs. C. W. Moberg	*Eighth District*	Detroit Lakes
Mrs. Karl Johnson	*Ninth District*	Duluth

Chairmen of Committees

STANDING COMMITTEES

Advisory—Mrs. C. L. Sheedy....................Austin

Allied Medical Careers—Mrs. Stanley Peterson...Austin

American Medical Education Foundation Fund—Mrs. J. A. Cosgriff............................Olivia

Archives—Mrs. H. H. Fesler................Saint Paul

Bulletin—Mrs. Wm. Gjerde..................Lake City

Cancer—Mrs. P. J. Pankratz...........Mountain Lake

Editor (Minnesota Medicine)—Mrs. H. O. Beek Saint Paul

Finance—Mrs. Harold Benjamin............Minneapolis

Legislation—Mrs. W. R. Schmidt.........Minneapolis

Medical and Surgical Relief—Mrs. L. G. Culver.... Saint Paul

Organization—Mrs. P. S. Rudie................Duluth

Press and Publicity—Mrs. A. B. Rosenfield..Minneapolis

Printing—Mrs. R. V. Sherman...............Red Wing

Program and Health Education—Mrs. M. F. Fellows Duluth

Public Relations—Mrs. Robert Estrem......Fergus Falls

Resolutions—Mrs. Reuben F. Erickson......Minneapolis

Revisions—Mrs. D. V. Boardman..............Winona

Today's Health—Mrs. M. I. Hauge..........Clarkfield

SPECIAL COMMITTEES

Civilian Defense—Mrs. D. G. Mahle..........Plainview

Health Days—Mrs. Harold F. Wahlquist....Minneapolis

In Memoriam—Mrs. J. S. Milton...........Minneapolis

News Letter—Mrs. W. G. Johanson.........Saint Paul

Roster—Mrs. F. A. Zinter................Minneapolis

School of Instruction—Mrs. Leonard Arling..Minneapolis

County Society Roster

Key to Symbols: *Deceased; †Affiliate, Associate or Life Members; ‡In Service; §Wife is Member of Woman's Auxiliary.

BLUE EARTH COUNTY MEDICAL SOCIETY

Regular meetings, last Monday of each month. Annual meeting, December
Number of members—48

President
Hammer, Lawrence M.......Mankato
Secretary
Chalgren, William S.........Mankato

Anderson, J. J...............Mankato
Anderson, Margaret.........Mankato
§ Andrews, R. N..............Mankato
Baird, Raymond L.......Lake Crystal
§ Batdorf, B. N.........Good Thunder
§ Butzer, J. A...............Mankato
§ Chalgren, Wm. S............Mankato
§ Conley, R. H................Mankato
§†Dahl, G. A..................Mankato
§ Dahlstet, J. P...............Mankato
§ Engstrom, Robert ....Mankato
§ Eustermann, J. J............Mankato
§ Franchere, F. Wm.......Lake Crystal
§ Fugina, G. R................Mankato
§ Geurs, B. R...............Mankato
§ Haes, J. E.................Mankato
§ Hammar, L. M.............Mankato
Hankerson, R. G......Minnesota Lake
† Hassett, R. G..............Mankato
§ Hoeper, P. G...............Mankato
§ Howard, M. I...............Mankato
† Huffington, H. L...........Mankato
§ Jones, O. H.................Mankato
§†Juliar, R. O...............St. Clair
§ Kaufman, W. B.............Mankato
§ Kearney, R. W.............Mankato
§ Kemp, A. F.................Mankato
§ Koenigsberger, Chas. ....Mankato
§ Langhoff, A. H.............Mankato
† Liedloff, A. G..............Mankato
§ Lindblom, A. E.........No. Mankato
§ Mickelson, J. C............Mankato
§†Miller, V. I.................Mankato
§ Morgan, H. O................Amboy
§ Penn, G. E.................Mankato
Roth, F. D.....................Mankato
§ Samuelson, L. G............Mankato
† Schmidt, P. A...........Aurora, Ill.
Schmitz, A. A..............Mankato
§ Sjoding, J. D...............Mankato
§ Smith, P. M..........Lake Crystal
§†Sohmer, A. E..............Mankato
§ Stillwell, W. C..............Mankato
§ Troost, H. B................Mankato
§ Vezina, J. C................Mapleton
§ Von Drasek, Joseph.........Mankato
† Wentworth, A. J............Mankato
Williams, H. O..........Lake Crystal

BLUE EARTH VALLEY MEDICAL SOCIETY

Regular meetings, third Thursday of each month
Annual meeting in November
Number of Members—39

President
Krause, Carl W.............Fairmont
Secretary
Boysen, Herbert.............Madelia

Armstrong, R. S..........Winnebago
* Barr, W. H.....................Wells
Bergman, O. B.............St. James
§Blumberg, H. B.............Fairmont
§ Boysen, Herbert.............Madelia
Bratrude, E. J.............St. James
Chambers, W. C.........Blue Earth
Cooper, M. D..............Winnebago
Coulter, H. E..................Madelia
Drexler, G. W............Blue Earth
† Farrish, R. C.............Sherburne
Gardner, V. H.............Fairmont
Hanson, Lewis...................Frost
Heimark, J. J...............Fairmont
* Holm, P. F.............Sarasota, Fla.
Hruza, Wm. J.................Madelia
Hurt, R. C....................Fairmont
† Hunte, A. F.........Alhambra, Calif.
Krause, C. W...............Fairmont
‡ Lester, M. J., Jr.............Truman
§ Lindahl, M. J.............Sherburne
Mattson, A. D.............St. James
McGroarty, J. J.................Easton
Mills, J. L................Winnebago
§ Misbach, Wm. D............Fairmont
§ Ourada, A. L..................Ceylon
Parsons, R. L..............Monterey
§ Rollins, T. G...................Elmore
Rowe, W. H.................Fairmont
§ Russ, H. H..............Blue Earth
Smith, Harry..........Lake Crystal
§ Smith, D. V.............Blue Earth
§ Snyder, C. D..................Kiester
§ Thayer, E. A...............Fairmont
Vaughan, V. M..............Truman
Virnig, M. P....................Wells
§ Virnig, R. P...................Wells
§ Wandke, O. E...............Fairmont
§ Wilson, C. E.............Blue Earth
§ Zemke, E. E...............Fairmont
Ziegler, Robert G...........Welcome

BROWN COUNTY MEDICAL SOCIETY

Regular meetings, quarterly
Annual meeting, January
Number of Members—32

President
Dubbe, Fred H.............New Ulm
Secretary
Fritsche, Carl J............New Ulm

§ Black, W. A...............New Ulm
Bregel, Fred L.............St. James
Cairns, R. J...........Redwood Falls
§ Dubbe, F. H.................New Ulm
§ Dysterheft, A. F..............Gaylord
§ Fesenmaier, O. B...........New Ulm
Flinn, J. B...........Redwood Falls
§ Fritsche, Albert...........New Ulm
§ Fritsche, Carl J...........New Ulm
§ Fritsche, T. R..............New Ulm
† Glaeser, John H..........Minneapolis
Goblirsch, A. P...........Sleepy Eye
Hovde, Rolf ....Winthrop
Inglis, William........Redwood Falls
Kaiser, Milton L..........New Ulm
§ Keithahn, E. E............Sleepy Eye
‡§Kitzberger, Peter..........New Ulm
§ Kruzick, S. J.............Sleepy Eye
§ Kusske, A. L................New Ulm
† Kusske, B. W.........St. Louis Park
Nuessle, W. G...........Springfield
§ Penk, E. L...............Springfield
Peterson, R. A....................Vesta
Racer, Harley..................Gibbon
Rayner, Ralph..................Gibbon
§†Reineke, G. F..............New Ulm
§ Saffert, C. A...............New Ulm
Schroeppel, J. E...........Winthrop
§ Seifert, O. J................New Ulm
§ Vogel, H. A.................New Ulm
Wisness, Osmund A.........Comfrey
§ Wohlrabe, E. J............Springfield

CAMP RELEASE DISTRICT MEDICAL SOCIETY

Chippewa, Lac Qui Parle and Yellow Medicine Counties
Regular meetings, second and fourth weeks of April, May and September
Annual meeting, October
Number of Members—32

President
Johnson, V. M...............Dawson
Secretary
Lima, L. R., Jr..........Montevideo

§ Allen, J. H.............Montevideo
Anderson, C. A..............Madison
† Andrejek, A. R...........Minneapolis
Barr, Ronald W..........Montevideo
§ Boody, G. J., Jr.............Dawson
§ Burns, F. M.....................Milan
§ Burns, M. A.....................Milan
Flom, Robert S....................Echo
Guilbert, G. D.......Waukesha, Wis.
§ Hartfiel, H. A............Montevideo
§ Hauge, M. I...............Clarkfield
§ Hudec, E. R......................Echo
Hudspeth, Wm. T............Madison
Huffington, Herb L........Waterville
‡ Johnson, C. M...............Dawson
§ Johnson, V. M...............Dawson
† Jordan, Kathleen........Granite Falls
Jordan, L. S............Granite Falls
Kaufman, W. C..............Appleton
§ Krystosek, L. A...........Clara City
† Lee, Walter N.......Claremont, Calif.
§ Lima, L. R., Jr...........Montevideo
§ Lundell, C. L...........Granite Falls
Nelson, M. S...........Granite Falls
Odland, Olin...........Granite Falls
§ Owens, W. A.............Montevideo
§ Pertl, A. L......................Canby
§ Roust, H. A.............Montevideo
§ Schmidt, P. G., Jr......Granite Falls
§ Smith, L. G..............Montevideo
§ Westby, Magnus............Madison
Westby, N. M...............Madison

CLAY-BECKER COUNTY MEDICAL SOCIETY

Regular meeting, none
Annual meeting, December
Number of Members—29

President
Midthune, A. S...........Lake Park
Secretary
Dodds, William C......Detroit Lakes

† Aborn, W. H................Hawley
Anderson, Roger L......Detroit Lakes
Bigler, Ivane................Perham
Bottolfson, B. T............Moorhead
Brabec, P. F..................Bagley
Carlson, Vernon J..........Moorhead
Christoferson, Lee......Fargo, N. D.
§ Dodds, Wm. C.........Detroit Lakes
§ Duncan, J. W.............Moorhead
Geib, Martin J.............Moorhead
† Hagen, O. J...............Moorhead
Humphrey, E. W..........Moorhead
Humphrey, E. W., Jr......Moorhead
Ingebrigtson, E. K.........Moorhead
Johnson, Olga H..........Moorhead
§ Larson, Arnold.........Detroit Lakes
§ Lorentzen, E. S........Detroit Lakes
§ Midthune, A. S...........Lake Park
§ Moberg, C. W..........Detroit Lakes
§ Odland, M. E..........Detroit Lakes
§ Oliver, James ....Moorhead
§ Otto, H. C...................Frazee
§ Rice, H. G...............Moorhead
§ Rutledge, L. H.........Detroit Lakes
Saxman, Gertrude Olsen.Georgetown
Seitz, S. B................Barnesville
§ Simison, Carl ....Barnesville
† Thysell, F. A..............Moorhead
Thysell, V. D.................Hawley

EAST CENTRAL MINNESOTA MEDICAL SOCIETY

Anoka, Chisago, Isanti, Kanabec, Mille Lacs, Pine and Sherburne Counties
Regular meetings, first Tuesday of February, April, June, August, October and December
Annual meeting, first Tuesday in December
Number of Members—40

President
McManus, W. F...........Princeton
Secretary
Tesch, Gordon H...........Elk River

Adkins, Galen H...........Sandstone
§ Albrecht, H. H..........Chisago City
‡ Baars, C. W.......Camp Cook, Calif.
§ Berge, H. L....................Mora
Beyer, Eugene................Braham
§ Blomberg, W. R...........Princeton
Bossert, C. S...................Mora
§ Bunker, B. W..................Anoka
Burseth, E. C...................Mora
* Clothier, E. F..............Elk River
* Dedolph, T. H...............Braham
† Dredge, H. P..............Sandstone
§ Gully, R. J...............Cambridge
Halpin, J. E...............Rush City
Henry, H. W...............Hinckley
Holmes, A. E..............Rush City
Hubin, E. G...............Sandstone
Johnson, Aldridge ....Isle
Kapsner, A. T..............Princeton
† Kelsey, C. G.................St. Paul
Krieser, A. E..................Anoka
Larson, G. E..............Cambridge
‡ Lorton, W. L....Junction City, Kans.
Mach, R. F................Pine City
Magnuson, R. C..........Cambridge
March, Kenneth A........Cambridge
§ McManus, W. F...........Princeton
‡ Metcalf, N. B..............Princeton
* Miller, E. W..................Anoka
§ Nordman, W. F.................Mora
Nygren, W. T...............Braham
Potek, David............Minneapolis
§ Roehlke, A. B.............Elk River
Sanderson, David J.....Fergus Falls
Schlesselman, G. H......Minneapolis
Schut, John W................Anoka
§ Spurzem, R. J.................Anoka
Stahn, Louis H...............Anoka
§ Stratte, A. K...............Pine City
§ Swensen, R. G.........North Branch
§ Tesch, G. H...............Elk River
Vik, Melvin....................Anoka
† Waller, J. D...............Pine City

FREEBORN COUNTY MEDICAL SOCIETY

Regular meetings, every two months, third Thursday
Annual meeting, December
Number of Members—31

President
Nelson, C. E. J............Albert Lea
Secretary
Steiner, L. E.............Albert Lea

§ Barr, L. C...............Albert Lea
Burns, Catherine.........Albert Lea
§ Butturff, C. R..............Freeborn
†§Calhoun, F. W............Albert Lea
§ Demo, R. A..............Albert Lea
§ Donovan, D. L...........Albert Lea
§ Egge, S. G...............Albert Lea
§ Ellertson, L. M...........Albert Lea
§ Erdal, O. A..............Albert Lea
§ Folken, F. G.............Albert Lea
† Freeman, J. P..............Glenville
Freligh, W. P............Albert Lea
† Gullixson, A........Longmont, Colo.
§ Hansen, T. M............Albert Lea
Kaasa, L. J.................St. Peter
† Kamp, B. A..............Albert Lea
§ Keil, M. A...............Albert Lea
† Leopard, B. A.......Brownsville, Tex.
Miller, Samuel ....Albert Lea
§ Neel, Harry B............Albert Lea
§ Nelson, C. E..............Albert Lea
§ Nesheim, M. O..............Emmons
§ Palmer, C. F.............Albert Lea
† Palmerton, E. S.........Minneapolis
§ Person, J. P..............Albert Lea
§ Prins, L. R...............Albert Lea
Schmidt, R. F..................Alden
§†Schultz, J. A.............Albert Lea
§ Sherman, A. G............Albert Lea
§ Steiner, L. E.............Albert Lea
§ Whitson, S. A............Albert Lea

GOODHUE COUNTY MEDICAL SOCIETY

Regular meeting date, none
Annual meeting, December
Number of Members—29

President
Halvorson, J. W............Goodhue
Secretary
Hartnagel, G. F...........Red Wing

Aanes, A. M..............Red Wing
§ Akins, W. M.............Red Wing
‡ Bagby, G. W...Ft. Leonard Wood, Mo.
‡ Boswell, J. T.......Portsmouth, Va.
Bridge, E. V............Cannon Falls
§ Brusegard, J. F...........Red Wing
Claydon, H. F............Red Wing
‡ Dovenmuehle, R. H.....El Paso, Tex.
Flom, M. G................Zumbrota
§ Graves, R. B.............Red Wing
§ Halvorson, J. W............Goodhue
§ Hartnagel, G. F...........Red Wing
§ Hawley, G. M. B., II......Red Wing
§ Hedin, R. F...............Red Wing
§ Hofmann, G. N...........Rochester
† Jones, A. W...............Red Wing
§ Juers, E. H...............Red Wing
§ Kimmel, G. C.............Red Wing
§ Larson, O. E. H...........Zumbrota
§ Liffrig, W. W.............Red Wing
§ Miller, W. R..............Red Wing
Molenaar, Robert E.....Cannon Falls
Reitmann, J. H...............Anoka
§ Sherman, R. V............Red Wing
† Smith, M. W..............Red Wing
§ Steffens, L. A.............Red Wing
§ Wasmund, C. W..........Red Wing
Weiss, Carl A...............Hastings
Williams, M. R.........Cannon Falls

HENNEPIN COUNTY MEDICAL SOCIETY

Regular meetings, first Monday of each month
Annual meeting, October, first Monday
Number of Members—879

President
Ehrenberg, Claude J......Minneapolis
Secretary
Aling, Charles A.........Minneapolis
Executive Secretary
Cook, Thomas P..........Minneapolis

Abramson, Milton........Minneapolis
Adkins, C. D.............Minneapolis
§ Agustsson, Heidar........Minneapolis
§ Ahern, E. E.............Minneapolis
§ Alexander, H. A..........Minneapolis
§ Aling, Chas. A...........Minneapolis
§ Altnow, Hugo O..........Minneapolis
§ Andersen, S. C...........Minneapolis
Anderson, A. S.......St. Louis Park
* Anderson, D. D..........Minneapolis
Anderson, D. M..........Minneapolis
§†Anderson, E. D..........Minneapolis
§ Anderson, E. R..........Minneapolis
§ Anderson, F. J...................
Ft. Leavenworth, Kans.
§ Anderson, K. W.........Minneapolis
§ Anderson, U. S..........Minneapolis
Anderson, Wm. H........Minneapolis
Anderson, Wm. T........Minneapolis
Andreassen, E. C............St. Paul
§ Andresen, K. D'A........Minneapolis

§	Andrews, R. S.	Minneapolis
§	Ankner, F. J.	Minneapolis
	Archer, W. E.	Minneapolis
	Arends, A. L.	Minneapolis
§	Arey, Stuart L.	Minneapolis
§	Arlander, C. E.	Minneapolis
§	Arling, L. S.	Minneapolis
	Arnold, Anna	Minneapolis
	Arvidson, Carl G.	Minneapolis
§†	Aune, Martin	Minneapolis
†	Aurand, Wm. H.	Minneapolis
§	Baggenstoss, O. J.	Minneapolis
§	Baird, J. W.	Minneapolis
§	Baken, M. P.	Minneapolis
	Baker, A. B.	Minneapolis
	Baker, A. T.	Minneapolis
†	Baker, Looe	Minneapolis
§	Baker, M. E.	Minneapolis
§	Balkin, S. G.	Minneapolis
	Bank, H. E.	Portland, Ore.
‡§	Barno, Alex	St. Louis Park
§	Barr, M. M.	Minneapolis
	Barr, R. N.	Minneapolis
	Barron, J. J.	Minneapolis
§	Barron, Moses	Minneapolis
	Barron, S. Steven	Minneapolis
†	Baxter, S. H.	Minneapolis
§	Beach, Northrop	Minneapolis
*	Beard, A. H.	Deephaven
†	Becker, A. M.	Minneapolis
§	Bedford, E. W.	Minneapolis
§	Beirstein, Saml.	Minneapolis
§	Beiswanger, R. H.	Minneapolis
†	Bell, E. T.	Minneapolis
§	Bellville, T. P.	Minneapolis
	Belzer, M. S.	Minneapolis
	Benesh, L. A.	Minneapolis
†	Benjamin, A. E.	Minneapolis
§	Benjamin, E. G.	Minneapolis
§	Benjamin, H. G.	Minneapolis
	Benson, E. E.	Minneapolis
	Berger, A. G.	Minneapolis
§	Bergh, G. S.	Minneapolis
	Bergh, S. M.	Minneapolis
§	Berkwitz, N. J.	Minneapolis
	Berman, Reuben	Minneapolis
	Bernstein, I. C.	Minneapolis
§	Bessesen, A. N., Jr.	Minneapolis
	Bessesen, D. H.	Buffalo Lake
†	Bessesen, W. A.	Minneapolis
	Beiter, R. N.	Minneapolis
§	Bilka, P. J.	Minneapolis
§	Binder, M. R.	Minneapolis
§	Blake, A. J.	Hopkins
§	Blake, James A.	Hopkins
§	Blake, Paul S.	Hopkins
§	Bloedel, T. J. G.	Osseo
§	Bloom, N. B.	Minneapolis
§	Blumenthal, J. S.	Minneapolis
§‡	Bodelson, A. H.	Pensacola, Fla.
	Boehrer, J. J., Jr.	Minneapolis
	Bofenkemp, Benj.	Minneapolis
§	Bohn, D. G.	Minneapolis
§	Boies, L. R.	Minneapolis
†	Booth, A. E.	Minneapolis
	Borden, C. W.	Minneapolis
§	Borgeson, E. J.	Minneapolis
§	Borman, C. N.	Minneapolis
	Borowicz, L. A.	Minneapolis
§	Bowers, G. G.	Minneapolis
	Boynton, Ruth E.	Minneapolis
§	Bratrud, A. F.	Minneapolis
	Breitenbucher, R. B.	Minneapolis
§	Brekke, Harvey J.	Minneapolis
	Brill, Alice K.	Minneapolis
	Brooks, Charles N.	Minneapolis
†	Brown, E. D.	Paynesville
	Brown, Wm. D.	Minneapolis
§	Buchstein, H. F.	Minneapolis
	Buckley, Ken	Minneapolis
§	Buirge, R. E.	Minneapolis
§	Burnham, W. H.	Minneapolis
§	Bushard, W. J.	Minneapolis
§	Buzzelle, L. K.	Minneapolis
§	Cable, M. L.	Minneapolis
§	Cabot, C. M.	Minneapolis
§	Cabot, V. S.	Minneapolis
	Cady, L. H.	Minneapolis
	Cameron, Isabell L.	Minneapolis
	Campbell, L. M.	Minneapolis
§	Campbell, O. J.	Minneapolis
§	Caplan, Leslie	Minneapolis
‡§	Card, Wm. H.	Great Lakes, Ill.
§	Carey, J. B.	Minneapolis
§	Carlander, L. W., Jr.	Minneapolis
§	Carlson, Lawrence	Minneapolis
§	Carlson, L. T.	Minneapolis
§	Caron, R. P.	Minneapolis
§	Caspers, Carl G.	Minneapolis
§	Cavanor, F. T.	Minneapolis
§	Ceder, E. T.	Minneapolis
§	Challman, S. A.	Minneapolis
	Chapman, C. B.	Minneapolis
	Chavez, D. A.	Minneapolis
	Chesler, M. D.	Minneapolis
	Chesley, A. J.	St. Paul
§	Chisholm, T. C.	Minneapolis
	Christensen, L. E.	Minneapolis
§	Christianson, H. W.	Minneapolis
	Clarke, E. K.	Minneapolis
§	Clay, L. B.	Minneapolis
§	Cochrane, R. F.	Minneapolis
	Coe, John I.	Minneapolis
§	Cohen, B. A.	Minneapolis
	Cohen, E. B.	Minneapolis
	Cohen, M. M.	St. Paul
§	Cohen, S. S.	Oak Terrace
	Condit, W. H.	Minneapolis
§	Cooper, J. P.	Excelsior
	Cooper, Robert R.	Minneapolis
	Corniea, A. D.	Minneapolis
§	Correa, D. H.	Minneapolis
	Cowan, D. W.	Minneapolis
	Craig, M. Elizabeth	Minneapolis
§	Cranmer, R. R.	Minneapolis
	Cranston, R. W.	Minneapolis
§	Creevy, C. D.	Minneapolis
§	Creighton, R. H.	Minneapolis
§	Culligan, L. C.	Minneapolis
§	Cundy, D. T.	Minneapolis
†	Cutts, George	Minneapolis
	Dady, E. E.	Minneapolis
§	Dahl, E. O.	Minneapolis
§	Dahl, J. A.	Minneapolis
	Dahl, James C.	Minneapolis
§	Daniel, D. H.	Minneapolis
§	Dargay, C. P.	Miinneapolis
§	Davis, J. C.	Minneapolis
§	Davis, Wm. I.	Mound
§	Del Plaine, C. W.	Minneapolis
§	Devereaux, T. J.	Wayzata
	Dickman, Roy W.	Minneapolis
§	Diehl, Harold S.	Minneapolis
	Diessner, H. D.	Minneapolis
	Donatelle, E. P.	Minneapolis
§	Dorge, R. I.	Minneapolis
	Dornblaser, H. B.	Minneapolis
§	Dorsey, George C.	Minneapolis
	Doxey, G. L.	Minneapolis
§	Doyle, L. O.	Minneapolis
§	Drake, C. R.	Minneapolis
‡§	Dredge, T. E.	Minneapolis
§	Drill, H. E.	Hopkins
§	Duff, Edwin R.	Minneapolis
§	Dunlap, E. H.	Minneapolis
§	Dupont, J. A.	Excelsior
§	Duryea, W. M.	Minneapolis
§†	Dutton, C. E.	Minneapolis
§	Dvorak, B. A.	Minneapolis
§	Dwan, Paul F.	Minneapolis
§	Dworsky, S. D.	Minneapolis
§	Ehrenberg, C. J.	Minneapolis
§	Ehrlich, S. P.	Minneapolis
§	Eich, M. A.	Minneapolis
	Eichhorn, E. P.	Minneapolis
	Eisenstadt, D. H.	Minneapolis
	Eisenstadt, Wm. S.	Minneapolis
	Eitel, George D.	Minneapolis
	Ellison, D. E.	Minneapolis
	Ellison, Ellis	Minneapolis
	Emond, A. J.	Farmington
	Emond, J. S.	Farmington
	Engelhart, P. C.	Minneapolis
	Englund, E. F.	Minneapolis
	Engstrand, O. J.	Minneapolis
	Erickson, C. O.	Minneapolis
	Erickson, L. F.	Minneapolis
	Erickson, Myron E.	Minneapolis
	Erickson, R. F.	Minneapolis
	Ericson, R. M.	Wayzata
	Evans, E. T.	Minneapolis
	Evans, R. D.	Minneapolis
	Fahr, George E.	Minneapolis
	Fansler, W. A.	Minneapolis
	Feeney, J. M.	Minneapolis
	Feigal, D. W.	Wayzata
	Feinberg, Philip	Minneapolis
	Feinstein, J. Y.	Minneapolis
	Fenger, E. P. K.	Oak Terrace
	Fingerman, D. L.	Minneapolis
	Fink, Leo Wm.	Minneapolis
	Fink, Walter H.	Minneapolis
	Fisher, Isadore I.	Minneapolis
†	Fitzgerald, D. F.	Wayzata
	Fieldstad, C. A.	Minneapolis
	Flagg, G. B.	Minneapolis
	Fleeson, Wm. H.	Minneapolis
†	Fleming, A. S.	Clearwater, Fla.
	Fleming, D. S.	Hopkins
	Fliehr, R. R.	Minneapolis
	Flink, E. B.	Minneapolis
‡	Floersch, A. J.	Seattle, Wash.
	Foker, L. W.	Minneapolis
	Folsom, Louis B.	Minneapolis
	Ford, Wm. H.	Minneapolis
	Foster, O. W.	Minneapolis
	Fowler, L. H.	Minneapolis
	Fox, James R.	Minneapolis
	Frane, D. B.	Minneapolis
	Frear, Rosemary	Minneapolis
	Fredericks, G. M.	Minneapolis
	Freeman, Craig	Minneapolis
	Freeman, D. W.	Minneapolis
	French, Lyle A.	Minneapolis
	Friberg, Jos.	Minneapolis
	Fried, Louis A.	Minneapolis
§	Friedell, Aaron	Minneapolis
	Friedman, Harry S.	Minneapolis
	Friedman, Jack	Minneapolis
	Friend, Charles A.	Minneapolis
§	Frost, J. B.	Minneapolis
§	Frost, R. H.	Oak Terrace
§	Frykman, H. M.	Minneapolis
	Fuller, Alice H.	Minneapolis
§	Funk, Victor K.	Oak Terrace
	Furman, Lucie Christine	Minneapolis
	Gaard, R. C.	Minneapolis
	Gallet, L. E.	Minneapolis
†	Galligan, Margaret	Minneapolis
§	Galloway, J. B.	Minneapolis
§	Gammell, J. H.	Minneapolis
§	Garske, G. L.	Minneapolis
	Garten, J. L.	Minneapolis
§	Gaviser, David	Minneapolis
§	Gibbs, Robert W.	Minneapolis
‡§	Giebenhain, J. N.	Minneapolis
§	Giere, J. C.	Minneapolis
§	Giere, R. W.	Minneapolis
	Gilbert, M. G.	Minneapolis
	Gingold, B. A.	Minneapolis
	Girvin, R. B.	Minneapolis
§	Goldberg, I. M.	Minneapolis
§	Goldman, T. I.	Minneapolis
§	Goldner, M. Z.	Minneapolis
	Goltz, Robert	Minneapolis
§	Good, H. D.	Minneapolis
	Gordon, P. E.	Minneapolis
	Gordon, S. S.	St. Louis Park
‡	Grais, Melvin L.	Minneapolis
	Grant, Suzanne	Minneapolis
§	Gratzek, F. R. E.	Minneapolis
	Gray, Royal C.	Minneapolis
§	Green, R. A.	Rochester
§	Greenberg, A. J.	Minneapolis
§	Greenfield, Irving	Minneapolis
†	Greishiemer, Esther M.	Phila., Pa
	Grimes, Marian	Minneapolis
§	Gronvall, P. R.	Minneapolis
§	Grotting, J. K.	Minneapolis
‡	Gullickson, Glen, Jr.,	Minneapolis
§	Gunlaugson, F. G.	Minneapolis
§	Gushurst, E. G.	Minneapolis
§	Gustason, H. T.	Minneapolis
	Haberer, Helen R.	Minneapolis
‡	Hagen, Paul S.	St. Paul
§	Hagen, W. S.	Minneapolis
†	Haggard, G. D.	Minneapolis
§	Hall, H. B.	Minneapolis
§	Hall, W. H.	Minneapolis
	Hallberg, C. A.	Minneapolis
§	Hannah, H. B.	Minneapolis
§	Hansen, C. O.	Minneapolis
§	Hansen, E. W.	Minneapolis
	Hansen, O. S.	Minneapolis
	Hansen, R. M.	Minneapolis
§	Hanson, H. J.	Minneapolis
	Hanson, H. V.	Minneapolis
§	Hanson, M. B.	Minneapolis
	Hanson, M. C.	Minneapolis
§	Hanson, Wm. A. H.	Minneapolis
	Happe, L. J.	Minneapolis
	Harris, L. D.	Minneapolis
§	Hartig, Hermina A.	Minneapolis
	Hartman, Evelyn	Minneapolis
§	Hass, F. M.	Minneapolis
§	Hastings, DeF. R.	Minneapolis
§	Hastings, D. W.	Minneapolis
§	Hauge, Erling T.	Minneapolis
‡§	Haugen, George W.	Pensacola, Fla.
	Haugen, John A.	Minneapolis
	Hauser, G. W.	Minneapolis
	Havel, Robert J.	Minneapolis
§	Haven, Walter K.	Minneapolis
§	Hawkinson, R. P.	Minneapolis
	Hayes, James M.	Minneapolis
§	Hays, Albert T.	Minneapolis
§	Head, Douglas P.	Minneapolis
§	Hebbel, Robert	Minneapolis
‡	Heisler, J. J.	Minneapolis
	Heller, Ben I.	Minneapolis
†	Hendrickson, J. F.	Minneapolis
§	Henrikson, E. C.	Minneapolis
†	Henry, C. E.	Kirksville, Mo.
	Henry, M. O.	Minneapolis
	Herbert, W. L.	Minneapolis
	Hermann, H. W.	Minneapolis
	Hesdorffer, M. B.	Martin
§†	Higgins, J. H.	Minneapolis
	Hill, Earl	Minneapolis

§ Hill, Elmer M. ....Minneapolis
§†Hillis, S. J.....East Bradenton, Fla.
Hinckley, R. G. ....Minneapolis
§ Hirshfield, F. R. ....Minneapolis
§ Hitchcock, C. R. ....Minneapolis
Hoffbauer, F. W. ....Minneapolis
§ Hoffert, H. E. ....Minneapolis
§ Hoffman, R. A. ....Minneapolis
§ Hoffman, W. L...........Minneapolis
§ Holmberg, C. J..........Minneapolis
§ Holzapfel, F. C. ....Minneapolis
‡ Horns, H. L. ....Minneapolis
§ Horns, R. C. ....Minneapolis
† Houkon, Bjarne ....
Luskoto, T.T.E., Africa
‡ Houle, R. J. ....New Brighton
Hovland, M. L. ....Minneapolis
Howard, R. B. ....Minneapolis
§ Howard, S. E. ....Minneapolis
Howell, C. W. ....Minneapolis
§ Huenekens, E. J. ....Minneapolis
§†Hultkrans, J. C. ....Minneapolis
§ Hultkrans, R. E. ....Minneapolis
† Hurd, Annah ....Minneapolis
‡ Hutchinson, C. J. ..So. Boston, Mass.
Hymes, Charles ....Minneapolis
† Hynes, John E. ....Minneapolis

Ide, Arthur W., Jr. ......Minneapolis
§ Idstrom, L. G. ....Minneapolis
§ Ingalls, Edgar G., Jr. ....Minneapolis
Irvine, H. G. ....Minneapolis
§ Iverson, R. M. ....Minneapolis
§ Jacobson, W. E. .....St. Louis Park
§ Jay, A. R. ....Minneapolis
§ Jensen, H. C. ....Minneapolis
§†Jensen, M. J. ....Minneapolis
§ Jensen, N. K. ....Minneapolis
Jensen, R. A. ....Minneapolis
‡ Jenson, A. R. ....New York
Jerome, Bourne ....Minneapolis
Jerome, Elizabeth ....Minneapolis
Jeub, R. P. ....Minneapolis
§ Johnson, A. B. ....Minneapolis
§ Johnson, A. E. ....Minneapolis
§ Johnson, E. W. ....Minneapolis
§ Johnson, H. A. ....Minneapolis
§ Johnson, J. A............Minneapolis
§ Johnson, J. W. ....Minneapolis
Johnson, Julius ....Minneapolis
§ Johnson, M. R. ....Minneapolis
Johnson, N. P. ....Minneapolis
§ Johnson, N. T. ....Minneapolis
Johnson, Reinald G. .....Minneapolis
§ Johnson, Reuben A.......Minneapolis
§ Johnson, Robert E. .....Minneapolis
Johnson, Roger S. ....Wayzata
Johnson, Y. T. ....Minneapolis
Jones, D. G. ....Hopkins
§†Jones, H. W., Jr. ....Minneapolis
Jones, Richard ....Minneapolis
§ Jones, W. R. ....Minneapolis
Josewich, Alexander .....Minneapolis
§ Judd, W. H. .....Washington, D. C.
Juhl, John H. ....Minneapolis
§ Jurdy, M. J. ....Minneapolis
§ Kalin, O. T. ....Minneapolis
Kallestad, Leonard L.......Wayzata
Kantar, B. L.............Minneapolis
Kaplan, H. A. ....Minneapolis
Kaplan, J. J. ....Minneapolis
§ Karleen, C. I. ....Minneapolis
§ Kaufman, H. J. ....Minneapolis
§ Kelby, G. M. ....Minneapolis
§ Kelly, J. P. ....Minneapolis
§ Kennedy, C. C. ....Minneapolis
† Kennedy, Jane F. ....Minneapolis
§ Kerkhof, A. C. ....Minneapolis
Kiesler, Frank, Jr........Minneapolis
† King, E. A. ....Minneapolis
King, F. W. ....Oak Terrace
§ Kinsella, T. J. ....Minneapolis
§ Kistler, A. J. ....Minneapolis
§ Knapp, M. E. ....Minneapolis
§ Knight, R. T. ....Minneapolis
† Knight, Ray R. ....Minneapolis
Knudsen, Helen L. ......Minneapolis
§ Koepcke, G. M. ....Minneapolis
Koller, H. M. ....Minneapolis
Koller, L. R. ....Minneapolis
Koller, Robert ....Minneapolis
Korchik, J. P. ....Minneapolis
Kottke, F. J. ....Minneapolis
§ Koucky, R. W. ....Minneapolis
§ Kremen, A. J. ....Minneapolis
Kucera, F. J...............Hopkins
§ Kucera, W. J., Jr.......Minneapolis
§ Kucera, Wm. J. ....Minneapolis
LaBree, John ....St. Louis Park
§ LaGaard, S. M. ....Minneapolis
Lajoie, J. M. ....Minneapolis
Lamb, H. Douglas........Minneapolis
§ Lang, L. A. ....Minneapolis
§ Lapierre, A. P. ....Minneapolis
Lapierre, J. T. ....Minneapolis

§ Larsen, F. W. ....Minneapolis
§ Larson, C. M. ....Minneapolis
§ Larson, L. M. ....Minneapolis
§ Larson, Leonard M. ....Oak Terrace
§ Larson, P. N. ....Minneapolis
Larson, R. H. ....Anoka
†§LaVake, R. T...........Minneapolis
§ Laymon, C. W. ....Minneapolis
† Lazar, H. L. ....Excelsior
† Leavitt, H. H. ....Phoenix, Ariz.
Lebowske, J. A. ....Minneapolis
§ Lecklitner, M. D........Minneapolis
§ Leemhuis, A. J. ....Minneapolis
§ Leland, H. R. ....Minneapolis
Lengby, F. A. ....Minneapolis
§ Lenz, Otto A. ....Minneapolis
§ Leonard, L. J. ....Minneapolis
§ Leonard, Saml. ....Minneapolis
Lerner, A. R. ....Minneapolis
§ Lewis, F. J. ....Minneapolis
Lillehei, E. J. ....Robbinsdale
‡ Lind, C. J., Jr. Ft. Sam Houston, Tex.
Lindberg, A. C. ....Minneapolis
§ Lindberg, V. L. ....Minneapolis
Lindberg, W. R. ....Minneapolis
§ Lindgren, R. C. ....Minneapolis
§ Lindquist, R. H. ....Minneapolis
§ Linner, Gunnar ....Minneapolis
§ Linner, Henry P. ....Minneapolis
§†Linner, John H..........Minneapolis
§ Linner, Paul W. ....Minneapolis
Lippman, E. S. ....Minneapolis
§ Lipschultz, Oscar ....Minneapolis
Litchfield, John T. ....Minneapolis
Litman, A. B. ....Minneapolis
Lober, Paul H. ....Minneapolis
§ Lofsness, S. V. ....Oak Terrace
§†Logefeil, R. C. ....Minneapolis
§ Loomis, E. A. ....Minneapolis
§ Lott, F. H. ....Minneapolis
Lovett, Beatrice R. ......Oak Terrace
Lowry, Elizabeth C. .....Minneapolis
Lowry, Paul ....Minneapolis
Lowry, Thomas ....Minneapolis
Lueck, W. W. ....Minneapolis
§ Lufkin, N. H. ....Minneapolis
Lund, George ....Minneapolis
Lundberg, Ruth I. ....Minneapolis
Lundblad, R. A. ....Minneapolis
Lundblad, S. W. ....Minneapolis
§ Lundgren, A. C. ....Minneapolis
§ Lundquist, V. J. P.......Minneapolis
† Lynch, M. J. ....Minneapolis
Lysne, Henry ....Minneapolis
§ Lysne, Myron ....Minneapolis

MacCarthy, J. D. ....Minneapolis
§ MacDonald, D. A. ....Minneapolis
MacDonald, John W. ....Minneapolis
§ Mach, Frank B. ....Minneapolis
§ MacKinnon, D. C. ......Minneapolis
*†Macnie, John S..........Minneapolis
§ Maeder, E. C. ....Minneapolis
§†Maland, C. O. ....Minneapolis
† Maloney, Wm. F. ....Minneapolis
§ Mankey, J. C. ....Minneapolis
§ Marking, G. H. ....Minneapolis
§ Martin, Geo. R. ....Minneapolis
Martinson, C. J. ....Wayzata
Martinson, E. J. ....Wayzata
† Matchan, G. R............Saint Paul
§ Mattill, P. M. ....Oak Terrace
§ Mattson, H. A. N. ......Minneapolis
§ Maxeiner, S. R. ....Minneapolis
§ McCaffrey, F. J. ....Minneapolis
§ McCann, E. J. ....Minneapolis
McCannel, M. A. ....Minneapolis
‡ McCarthy, Donald ....Saint Paul
McCartney, J. S. ....Minneapolis
§ McCormick, D. P. ....Minneapolis
† McDaniel, Orianna ......Minneapolis
§ McFarland, A. H. ......Minneapolis
§ McGandy, R. F. ....Minneapolis
§ McGeary, G. E. ....Minneapolis
§ McInerny, M. W. ....Minneapolis
McKelvey, J. L. ....Minneapolis
§ McKenzie, C. H. ....Minneapolis
§ McKinley, C. A. ....Minneapolis
§ McKinney, F. S. ....Minneapolis
§ McLaughlin, B. H. ......Saint Paul
§ McMurtrie, Wm. B. ....Minneapolis
McNeil, J. J. ....Minneapolis
§ McPheeters, H. O. ......Minneapolis
† McQuarrie, Irvine ......Minneapolis
§ Meller, R. L. ....Minneapolis
§ Merkert, C. E. ....Minneapolis
§ Merkert, G. L. ....Minneapolis
† Merrick, C. T. ....Minneapolis
† Merrill, Elizabeth ....Minneapolis
§ Meyer, A. J. ....Minneapolis
§†Meyer, Ette L. ....Minneapolis
Meyer, Robert J. ....Minneapolis
Michael, J. C. ....Minneapolis
§ Michel, H. H. ....Minneapolis
† Michelsen, Emma F. ....Minneapolis

§ Michelson, H. E. ....Minneapolis
§ Miller, A. L. ....Minneapolis
§ Miller, Harold E. ....Minneapolis
§ Miller, Hugo E. ....Minneapolis
§ Miller, J. C. ....Minneapolis
Millett, D. K. ....Minneapolis
§ Milton, J. S. ....Minneapolis
Minsky, A. A. ....Minneapolis
Mitby, Irving ....Minneapolis
§ Mitchell, B. D. ....Minneapolis
Mitchell, E. C. ....Minneapolis
§ Mitchell, M. T. ....Minneapolis
§ Mixer, Harry W. ....Minneapolis
§ Moe, John H. ....Minneapolis
§ Moehn, John T. ....Minneapolis
§ Moen, J. K., Jr. ....Minneapolis
† Monahan, Elizabeth S. ..Minneapolis
§ Monson, E. M. ....Minneapolis
Moore, George E. .....Buffalo, N. Y.
§ Moore, I. H. ....Minneapolis
Moorhead, Marie ....Minneapolis
§ Moos, Daniel J. ....Minneapolis
§ Mork, A. H. ....Anoka
§ Mork, Frank E. ....Anoka
Morrison, C. J. ....Minneapolis
Mosser, Donn G. ....Minneapolis
§ Mulholland, Wm. M. ....Minneapolis
Murphy, E. P. ....Minneapolis
§ Musty, N. J. ....Minneapolis
§ Myers, J. A. ....Minneapolis
§ Myhre, James A. ....Minneapolis
§ Naslund, A. W. ....Minneapolis
Nauth, Bernard S. ......Minneapolis
‡§Neal, Joe M. ....Saint Paul
§ Neary, R. P. ....Minneapolis
Nelson, Bernette G. .....Minneapolis
Nelson, Bernice A. .....Minneapolis
Nelson, C. B. ....Minneapolis
§ Nelson, E. N. ....Minneapolis
§ Nelson, Harvey ....Minneapolis
§ Nelson, L. S. ....Minneapolis
§ Nelson, M. C. ....Minneapolis
Nelson, Maxine ....Minneapolis
§ Nelson, O. L. N. ....Minneapolis
§ Nelson, W. I. ....Minneapolis
Nerenberg, S. T. ....Minneapolis
§ Nesbitt, Saml. ....Minneapolis
§ Nesset, L. B............Minneapolis
§ Nesset, Wm. D. ....Minneapolis
Neumeister, Charles .....Minneapolis
Nice, C. M. ....Minneapolis
Noonan, Wm. J. ....Minneapolis
Noran, A. S. N. ....Minneapolis
§ Noran, H. H. ....Minneapolis
§ Nord, R. E. ....Minneapolis
§ Nordin, G. T. ....Minneapolis
§ Nordland, Martin ....Minneapolis
§ Nordland, Martin, Jr. ...Minneapolis
Norum, Henry A. ....Minneapolis
Norval, Mildred ....Minneapolis
† Noth, H. W. ....Minneapolis
§ Nydahl, M. J. ....Minneapolis
§ Nylander, E. G..........Minneapolis
*†Nystrom, Ruth G.
Malibu Beach, Calif.
O'Donnell, J. E. ....Minneapolis
O'Hanlon, J. A. ....Minneapolis
§†Oberg, Carl M. ....Minneapolis
§ Olsen, Edw. G. ....Minneapolis
§ Olson, Alton C. ....Minneapolis
Olson, Carl J. ....Minneapolis
Olson, C. K. ....Minneapolis
† Olson, Olof A. ....Minneapolis
O'Phelan, E. Harvey.....Minneapolis
§ Oppen, E. G............Minneapolis
Oppen, Melvin G...........Wayzata
§ Opstad, E. T. ....Oak Terrace

§ Palen, B. J. ....Minneapolis
Papermaster, T. C. .....Minneapolis
‡ PeLuso, Charles R......Minneapolis
§ Peppard, Thos. A. ....Minneapolis
Perlman, H. L. ....Minneapolis
§ Petersen, G. L. ....Minneapolis
§†Petersen, John R. ....Minneapolis
Petersen, P. C. ....Minneapolis
Peterson, Wm. E. ....Minneapolis
§ Peterson, H. W. ....Minneapolis
Peterson, N. P. ....Minneapolis
Peterson, O. H. ....Minneapolis
§†Peterson, O. H., Jr. ....Minneapolis
Peterson, Palmer A. .....Minneapolis
§ Peterson, P. E. ....Minneapolis
§ Peterson, W. C. ....Minneapolis
Peterson, W. Henry .....Minneapolis
§ Petit, J. V. ....Minneapolis
§ Petit, Leon J. ....Minneapolis
§ Pewters, J. T. ....Minneapolis
§ Peyton, Wm. T. ....Minneapolis
§ Phelps, K. A. ....Minneapolis
§ Plass, H. F. R. ....Minneapolis
§†Platou, E. S. ....Minneapolis
§ Plimpton, N. C., Jr. ....Minneapolis
§ Pohl, John F. M. ....Minneapolis
Polzak, J. A............Minneapolis

Poppe, F. H.	Minneapolis
§ Potter, R. B.	Minneapolis
† Pratt, F. J., Sr.	Minneapolis
§ Pratt, F. J., Jr.	Minneapolis
Preine, Irving A.	Minneapolis
§ Preston, Paul James	Minneapolis
§ Priest, Robt. E.	Minneapolis
§†Prim, Jos. A.	Minneapolis
§ Proffitt, Wm. E.	Minneapolis
§ Proshek, C. E.	Minneapolis
§ Quello, R. O. B.	Minneapolis
§†Quist, Henry W.	Minneapolis
§ Quist, H. W., Jr.	Minneapolis
§ Ransom, H. R.	Osseo
§ Reader, D. R.	Minneapolis
§ Regnier, Edw. A.	Minneapolis
Reid, Lewis M.	Excelsior
§ Reif, H. A.	Minneapolis
§ Reiley, R. E.	Minneapolis
Remote, W. D.	Minneapolis
§ Resch, J. A.	Minneapolis
§ Rice, Carl O.	Minneapolis
Rice, Frank B.	Minneapolis
§ Rice, Fred A.	Minneapolis
Richdorf, L. F.	Minneapolis
§ Rieke, W. W.	Wayzata
Rigler, Leo G.	Minneapolis
Riordan, Elsie M.	Minneapolis
§ Risch, R. E.	Minneapolis
Rizer, D. K.	Minneapolis
Rizer, R. I.	Minneapolis
Robb, Edwin F.	Minneapolis
§ Robbins, O. F.	Minneapolis
§ Roberts, L. J.	Minneapolis
§ Roberts, S. W.	Minneapolis
§†Roberts, Wm. B.	Minneapolis
Rocknem, R. E.	Minneapolis
§ Rockwell, C. V.	Minneapolis
† Rodda, Fredk. C.	Minneapolis
§ Rodgers, R. S.	Minneapolis
‡ Romness, Kenneth	Minneapolis
Rosander, Phyllis	Minneapolis
Rosenbaum, D. L.	Minneapolis
§ Rosendahl, F. G.	Minneapolis
§ Rosenfield, A. B.	Minneapolis
§ Rosenow, J. H.	Minneapolis
Rosenwald, R. M.	Minneapolis
§ Ross, A. J.	Minneapolis
Rossen, Ralph	Hastings
§ Rothnem, Morris	Minneapolis
§ Rucker, Wm. H.	Minneapolis
Rud, Norman E.	Minneapolis
§ Russeth, A. N.	Minneapolis
§ Rusten, E. M.	Minneapolis
§ Rydburg, W. C.	Minneapolis
§ St. Cyr, Harry W., Jr.	Robbinsdale
§ St. Cyr, K. J.	Robbinsdale
§ Sadler, Wm. P., Jr.	Minneapolis
§ Saliterman, B. I.	Minneapolis
§ Samuelson, Saml.	Minneapolis
§ Sandt, K. E.	Minneapolis
§ Sanford, R. A.	Minneapolis
§ Sawatzky, Wm. A.	Minneapolis
§ Sborov, A. M.	Minneapolis
§ Schaaf, F. H. K.	Minneapolis
† Schaar, F. E.	Minneapolis
§ Schaefer, W. G.	Minneapolis
† Scheldrup, N. H.	Minneapolis
§ Scherer, L. R.	Minneapolis
Scherling, S. S.	Minneapolis
§ Schiele, B. C.	Minneapolis
§ Schmidt, G. F.	Minneapolis
§ Schmidt, W. R.	Minneapolis
† Schmitt, S. C.	El Cason, Calif.
† Schneider, R. A.	New York, N. Y.
§ Schottler, M. E.	Minneapolis
§ Schroeder, A. J.	Minneapolis
§ Schultz, J. H.	Minneapolis
§ Schultz, P. J.	Minneapolis
§ Schulze, Wm. M.	Minneapolis
Schwartz, E. R.	Minneapolis
§ Schwartz, V. J.	Minneapolis
§ Scott, H. G.	Minneapolis
‡ Seaberg, John A.	Minneapolis
† Segal, M. A.	Minneapolis
Seham, Max	Minneapolis
§ Seifert, M. H.	Excelsior
§ Seljeskog, S. R.	Minneapolis
§ Semsch, R. D.	Minneapolis
§ Shandorf, J. F.	Minneapolis
Shaperman, Eva P.	Minneapolis
Shapiro, S. K.	Minneapolis
§ Shaw, H. A.	Minneapolis
Shea, Andrew W.	Minneapolis
§ Sher, Lewis	Minneapolis
§ Sherman, L. F.	Minneapolis
Shronts, J. F.	Minneapolis
§ Siegmann, Wm. C.	Minneapolis
Sikkema, Stella	Minneapolis
Silver, J. D.	Minneapolis
§†Simons, J. H.	Minneapolis
§ Simonson, D. B.	Minneapolis
† Simpson, E. DeW.	Minneapolis
§ Sinykin, M. B.	Minneapolis
Siperstein, D. M.	Minneapolis
† Sivertsen, Andrew	Minneapolis
§†Sivertsen, Ivar	Minneapolis
§ Skjold, A. C.	Minneapolis
Smiley, J. T.	Minneapolis
§ Smisek, F. M. E.	Minneapolis
Smith, Adam M.	Minneapolis
§ Smith, Archie M.	Minneapolis
§ Smith, Baxter A., Jr.	Minneapolis
Smith, G. G.	Minneapolis
† Smith, Homer R.	Minneapolis
† Smith, Margaret I.	Robbinsdale
Smith, Marie A.	Minneapolis
§ Smith, Norvin R.	Minneapolis
§ Smith, Theo. S.	Minneapolis
Smith, Wm. T.	Minneapolis
Soderlind, R. T.	Minneapolis
§ Solhaug, Saml. B.	Minneapolis
§ Solvason, H. M.	Minneapolis
Spain, W. Thos.	New Brunswick, N. J.
§ Spano, Jos. P.	Minneapolis
§ Spink, W. W.	Minneapolis
§ Sponsel, Kenath	Minneapolis
† Spratt, Chas. N.	Minneapolis
§ Stahr, A. C.	Hopkins
§ Stanford, C. E.	Minneapolis
‡ Staub, Henry P.	Minneapolis
§ Stelter, L. A.	Minneapolis
§ Stennes, J. L.	Minneapolis
Stewart, M. J.	Minneapolis
§ Stewart, Rolla I.	Minneapolis
‡ Steigler, F. S.	Saint Paul
Stillwell, G. K.	Minneapolis
§ Stoesser, A. V.	Minneapolis
Stoltz, Robert C.	Minneapolis
† Stomel, Joseph	Los Angeles, Calif.
§ Stone, S. P.	Minneapolis
† Strachauer, A. C.	Minneapolis
§ Strickler, J. H.	Minneapolis
§ Strom, G. W.	Minneapolis
Stromgren, D. T.	Minneapolis
§ Stromme, Wm. B.	Minneapolis
Strunk, C. A.	Minneapolis
Stuermer, Harry W.	Minneapolis
‡ Sturges, Robert L.	Minneapolis
§†Subby, Walter	Minneapolis
Sukov, Marvin	Minneapolis
§ Swanson, R. E.	Minneapolis
§ Sweetser, H. B.	Minneapolis
§ Sweetser, T. H.	Minneapolis
† Sweitzer, S. E.	Minneapolis
§†Swendseen, C. G.	Minneapolis
Syverton, Jerome T.	Minneapolis
§ Tangen, G. M.	Minneapolis
Taylor, Jos. H.	Minneapolis
§ Tenner, R. J.	Minneapolis
§‡Terry, Wm. S.	Portsmouth, Va.
† Thomas, George E.	Minneapolis
Thomes, A. Boyd	Minneapolis
§ Thompson, W. H.	Minneapolis
§ Thorsen, David S.	Minneapolis
§ Thorson, S. V.	Minneapolis
§ Thysell, D. M.	Minneapolis
Tichey, Fae Y.	Minneapolis
§†Tingdale, A. C.	Minneapolis
§ Tinkham, R. G.	Minneapolis
Titrud, L. A.	Minneapolis
§ Tobin, John D.	Minneapolis
Todd, Romona L.	Minneapolis
§ Trach, B. B.	Minneapolis
§ Trow, James E.	Minneapolis
§ Trow, Wm. H.	Minneapolis
§ Trueman, H. S.	Minneapolis
§ Tudor, R. B.	Minneapolis
† Tunstead, H. J.	Minneapolis
§†Turnacliff, D. D.	Saint Paul
Twomey, J. E.	Minneapolis
§ Ude, Walter H.	Minneapolis
§†Ulrich, Henry L.	Minneapolis
§ Ulvestad, H. S.	Minneapolis
§ Undine, C. A.	Minneapolis
Vik, A. Elliott	Minneapolis
§ Wahlquist, H. F.	Minneapolis
§ Waldron, C. W.	Minneapolis
§ Wall, Carl R.	Minneapolis
§ Walsh, Francis M.	Minneapolis
§ Walsh, Wm. T.	Minneapolis
Wangensteen, O. H.	Minneapolis
Ward, Percy A.	Minneapolis
§ Watson, C. G.	Minneapolis
Watson, C. J.	Minneapolis
† Weaver, M. Mc.	Vancouver, B. C.
§ Webb, Edgar A.	Minneapolis
Webb, Roscoe C.	Minneapolis
§ Webber, R. J.	Hopkins
Weber, Lowell	Minneapolis
Weisberg, R. J.	Minneapolis
Welles, H. J.	Minneapolis
§ Wendland, J. P.	Minneapolis
† Werner, George	Minneapolis
† West, Catherine C.	Minneapolis
§†Wethall, Anton G.	Minneapolis
Wetherby, Macnider	Minneapolis
Wheeler, R. W.	Minneapolis
§ White, A. A.	Minneapolis
§ White, S. M.	Minneapolis
§ White, W. D.	Minneapolis
§ Whitesell, L. A.	Minneapolis
§ Widen, W. F.	Minneapolis
† Wilcox, A. E.	Minneapolis
† Wilder, K. W.	Minneapolis
§ Wilder, R. L.	Minneapolis
§ Wilder, R. M., Jr.	Minneapolis
§ Wilken, P. A.	Minneapolis
† Willcutt, C. E.	Phoenix, Ariz.
† Williams, Robert	Carthage, Ill.
Winchell, Paul	Minneapolis
Winther, Nora M. C.	Minneapolis
§ Wipperman, F. F.	Minneapolis
§ Witham, Carl A.	Minneapolis
Wittich, F. W.	Minneapolis
§ Wohlrabe, A. A.	Minneapolis
§ Wohlrabe, A. C.	Minneapolis
§ Wolf, Alfred H.	Minneapolis
Wolter, Frederick H.	Minneapolis
Wright, T. D.	Minneapolis
§ Wright, Wale S.	Minneapolis
Wright, Wm. S.	Minneapolis
Wyatt, O. S.	Minneapolis
Wynne, H. M. N.	Minneapolis
§ Ylvisaker, R. S.	Minneapolis
§ Yoerg, Otto W.	Minneapolis
Zahrendt, O. Lewis	Minneapolis
Zaworski, Leo A.	Minneapolis
§ Zierold, A. A.	Minneapolis
§ Zinter, F. A.	Minneapolis
§ Ziskin, Thos.	Minneapolis

KANDIYOHI-SWIFT-MEEKER COUNTY MEDICAL SOCIETY

Regular meetings, third Thursday of each month
Annual meeting, December
Number of Members—48

President	
Peterson, Willard E.	Willmar
Secretary	
Jacobs, D. L.	Willmar
Allison, D. D.	Litchfield
Austrian, Sol	Cosmos
Bosland, H. G.	Willmar
Bradley, N. J.	Willmar
Chadbourn, W. A.	Minneapolis
† Daignault, Oscar	Benson
† Danielson, K. A.	Litchfield
Danielson, Lennox	Litchfield
Dille, D. E.	Litchfield
Eberley, T. S.	Benson
Ellinger, A. J.	Willmar
Fisher, J. M.	Willmar
Frederickson, Alice C.	Willmar
* Frisch, F. P.	Willmar
† Frost, E. H.	Willmar
Giere, S. W.	Benson
Gilman, L. C.	Willmar
Griffin, R. P.	Benson
Guy, Jack A.	New London
Herbst, R. F.	Willmar
Hinz, W. E.	Willmar
Hodapp, R. V.	Willmar
Holm, Donald	Benson
Jacobs, D. L.	Willmar
§†Jacobs, J. C.	Willmar
Katzberg, Lewis	Willmar
Kaufman, E. J.	Appleton
Lundblad, R. M.	Clara City
Macklin, W. E., Jr.	Willmar
McCarthy, A. M.	Willmar
Michels, R. P.	Willmar
† O'Connor, D. C.	Eden Valley
Opsahl, L. J.	Willmar
Ostling, B. C.	Kerkhoven
Pedersen, Robert L.	Willmar

† Penhall, F. W..............Willmar
Peterson, W. E..............Willmar
Porter, O. M..............Willmar
Proeschel, R. K..............Willmar
Rorem, Joseph A..............Appleton
Rygh, H. N..............Atwater
Schnell, F. S..............Litchfield
Schutz, John C..............Eden Valley
Sellers, G. K..............Dassel
Solsem, F. N. S..............Spicer
Sorum, F. T..............Willmar
Sutherland, W. H..............Benson
‡ Verby, J. E., Jr..............Litchfield
Wilmot, C. A..............Litchfield
Wilmot, H. E..............Litchfield

LYON-LINCOLN COUNTY MEDICAL SOCIETY

Regular meeting, last Tuesday of September, October, April and May
Annual meeting, last Tuesday of October
Number of Members—28

President
Remsberg, Robert R..............Tracy
Secretary
Purves, G. H..............Hendricks

‡ Benson, L. M..............Tracy
Bodaski, Albert A..............Tyler
Eckdale, J. E..............Marshall
Ferguson, W. C..............Walnut Grove
Ford, Burton C..............Marshall
Friedell, George..............Ivanhoe
† Gray, F. D..............Marshall
Hedenstrom, P. C..............Marshall
Helferty, J. K..............Boise, Ida.
Hermanson, P. E..............Hendricks
† Hoidale, Andrew D..............Tracy
Kreuzer, Titus..............Marshall
Johnson, C. Percy..............Tyler
Monson, L. J..............Canby
Murphy, J. E..............Marshall
Peterson, K. A..............Marshall
Purves, G. H..............Hendricks
Remsberg, R. R..............Tracy
† Robertson, J. B..............Minneapolis
Sether, A. F..............Ruthton
Smith, Lloyd A..............Tyler
Thompson, C. O..............Hendricks
Turbak, C. E..............Canby
§ Vadheim, A. L..............Tyler
†§ Valentine, W. H..............Tracy
Wolstan, S. D..............Minneota
Workman, W. G..............Tracy
Yaeger, W. W..............Marshall

McLEOD COUNTY MEDICAL SOCIETY

Regular meeting, third Thursday of each month
Annual meeting, January
Number of Members—21

President
Peterson, Kenneth L..............Hutchinson
Secretary
Griebie, Grant L..............Brownton

§ Brink, D. M..............Hutchinson
† Clement, J. B..............Lester Prairie
§ Goss, H. C..............Glencoe
Goss, Martha D..............Glencoe
Griebie, Grant L..............Brownton
§ Holm, H. H..............Glencoe
§ Jensen, A. M..............Brownton
§ Klima, W. W..............Stewart
†§ Leitschuh, L. F..............Winsted
§ Lippmann, E. W..............Hutchinson
‡§ McMahon, M. J..............St. Cloud
§ Neumaier, Arthur..............Glencoe
§ Peterson, K. P..............Hutchinson
Pone, John..............Silver Lake
Sahr, W. G..............Hutchinson
Scholpp, O. W..............Hutchinson
§ Selmo, J. D..............Norwood
§ Sheppard, C. G..............Hutchinson
‡§ Smith, G. R..............Hutchinson
§ Smyth, J. J..............Lester Prairie
§ Truesdale, C. W..............Glencoe

MOWER COUNTY MEDICAL SOCIETY

Regular meeting, last Thursday of each month
Annual meeting, December
Number of Members—36

President
Anderson, H. J..............Austin
Secretary
Rosenthal, F. H..............Austin

§ Anderson, D. P..............Austin
§ Anderson, H. J..............Austin
Anderson, Wallace R..............Austin
Barber, Tracy..............Austin
§ Cronwell, B. J..............Austin
§ Fisch, H. M..............Austin
§ Flanagan, L. G..............Austin
Frydenlund, C. B..............Lyle
§ Grise, W. B..............Austin
† Havens, J. G. W..............Austin
† Hegge, O. H..............Austin
§ Hegge, R. S..............Austin
†§ Hertel, G. E..............Austin
Hesla, Inman A..............Austin
§ Leck, P. C..............Austin
‡ Lewis, J. S., Jr..............Minneapolis
§ Lommen, P. A..............Austin
McKenna, Elizabeth M..............Austin
§ McKenna, J. K..............Austin
Melzer, G. R..............Lyle
Miller, Herman..............Grand Meadow
Morse, M. P..............LeRoy
Nesse, J. A..............Austin
Osborn, Donald O..............Austin
Peterson, Stanley C..............Austin
§ Robertson, P. A..............Austin
§ Rosenthal, F. H..............Austin
§ Sargent, E. C., Jr..............Austin
Schneider, P. J..............Adams
§ Seery, T. M..............Austin
§ Sheedy, C. L..............Austin
Thomson, James M..............Austin
§ Twiggs, L. F..............Austin
§ Van Cleve, H. P..............Austin
§ Wilson, F. C..............Austin
§ Wright, R. R..............Austin

NICOLLET-LE SUEUR COUNTY MEDICAL SOCIETY

Regular meeting, not scheduled
Annual meeting, December
Number of Members—29

President
Johnson, H. C..............No. Mankato
Secretary
Nilson, H. J..............No. Mankato

§‡ Aitkens, H. B..............LeCenter
§ Branham, D. S..............St. Peter
Canfield, Wayne W..............St. Peter
§ Covell, W. W..............St. Peter
§ Curtis, R. A..............LeCenter
§ Erickson, Swan..............Le Sueur
§† Giroux, A. A..............Mankato
Gridley, John W..............St. Peter
§ Grimes, B. P..............St. Peter
Henry, M. R..............St. Peter
§ Johnson, H. C..............No. Mankato
Kabrick, O. A..............St. Peter
Kath, R. H..............Arlington
§ Larson, M. H..............Nicollet
§ Lenander, M. E..............St. Peter
§ Nilson, H. J..............No. Mankato
§ Olmanson, E. G..............St. Peter
§ Olson, D. C..............Gaylord
‡ Orwoll, H. S..............Japan
§ Rudie, C. N..............St. Peter
Schulberg, V. A..............
New Port Beach, Calif.
§ Sjostrom, L. E..............St. Peter
§ Sonnesyn, N. N..............Le Sueur
Stoeckmann, Arthur E..............St. Peter
§ Strathern, C. S..............St. Peter
§† Strathern, F. P..............St. Peter
§ Traxler, J. F..............Henderson
§ Wilcox, G. C..............St. Peter
§ Wohlrabe, C. F..............No. Mankato

OLMSTED-HOUSTON-FILLMORE-DODGE COUNTY MEDICAL SOCIETY

Regular meetings, first Wednesday of every other month
Annual meeting in November
Number of Members—570

President
Moersch, F. P..............Rochester
Secretary
Carryer, Haddon M..............Rochester

§ Achor, R. W. P..............Rochester
§ Adams, R. C..............Rochester
† Aga, John H..............Rochester
§ Affeldt, D. E..............Kasson
§ Ahlfs, J. J..............Caledonia
§ Allen, E. V. N..............Rochester
† Allen, Raymond A..............Rochester
† Amberg, Samuel..............Rochester

§	Andersen, H. A.	Rochester
§	Anderson, M. J.	Rochester
‡	Anderson, Milton	Rochester
†	Ardan, Nicholas, Jr.	Rochester
	Armstrong, Wilbur A.	Rochester
‡§	Atmore, W. G.	Brooklyn
§	Baggenstoss, A. H.	Rochester
§	Bahn, R. C.	Rochester
‡	Bain, R. C.	San Francisco, Calif.
	Bair, Hugo L.	Rochester
§	Baker, G. S.	Rochester
	Baker, H. L.	Rochester
§	Baker, H. R.	Hayfield
§	Baker, P. L.	Rochester
§	Baker, R. L.	Madison, Wis.
§†	Balfour, D. C.	Rochester
§	Balfour, W. M.	Rochester
§	Banner, E. A.	Rochester
§	Bannon, W. G.	Rochester
§	Bargen, J. A.	Rochester
§	Barker, N. W.	Rochester
	Barrett, J. W.	Rochester
§	Bartholomew, L. G.	Rochester
§	Bastron, J. A.	Rochester
§	Bayard, E. D.	Rochester
§	Beahrs, O. H.	Rochester
§	Beard, E. F.	Rochester
	Becker, D. L.	Rochester
‡	Becker, S. W., Jr.	Chicago, Ill.
§	Bender, L. F.	San Diego, Calif.
§	Bennett, Warren A.	Rochester
	Benoit, Clair F.	Rochester
§	Berens, James	Rochester
†	Berge, Henry B.	Rochester
†	Berge, Kenneth G.	Rochester
†	Berkman, David	Oronoco
§	Berkman, J. M.	Rochester
†§	Bernatz, P. E.	Decorah, Iowa
§	Bickel, W. H.	Rochester
†	Bigelow, C. E.	Dodge Center
§	Black, B. M.	Rochester
	Block, M. A.	Rochester
†	Boothby, W. M.	Alberquerque, N. M.
§	Bostwick, J. L.	Montgomery, Ala.
†	Bowes, Donald E.	Rochester
†	Bowes, Earl B.	Rochester
§	Boyd, D. A., Jr.	Rochester
§	Braasch, J. W.	Rochester
§†	Braasch, Wm. F.	Rochester
	Brady, Joan	Rochester
†	Brandenburg, Joan	Rochester
§	Brandenburg, R. O.	Rochester
	Braun, Robert A.	Rochester
§	Brickley, P. M.	Rochester
	Brindley, C. O.	Rochester
	Broadbent, J. C.	Rochester
	Broders, C. W.	Rochester
	Brown, Alexander	Rochester
§	Brown, H. A.	Rochester
§	Brown, J. R.	Rochester
	Brown, Philip W.	Rochester
§	Brunsting, L. A.	Rochester
§	Buie, L. A.	Rochester
§	Burchell, H. B.	Rochester
	Burgert, E. O., Jr.	Rochester
§	Burke, E. C.	Rochester
§	Butt, H. R.	Rochester
§	Cain, J. C.	Rochester
	Campbell, Donald C.	Rochester
§	Carey, J. M.	Rochester
§	Carr, D. T.	Rochester
§	Carryer, H. M.	Rochester
	Chance, D. P.	Rochester
§	Childs, D. S., Jr.	Rochester
†	Chiles, N. H.	Rochester
§	Christensen, N. A.	Rochester
§	Clagett, O. T.	Rochester
	Clark, Edward	Rochester
§	Clark, L. W.	Spring Valley
§	Clark, P. L., III	Rochester
	Clifton, Theodore	Chatfield
	Cofer, Vernon L., Jr.	Rochester
	Colby, M. Y., Jr.	Rochester
§	Comfort, M. W.	Rochester
‡§	Cooley, J. C.	Wyoming
	Cooney, J. F.	Rochester
	Cooper, Talbert	Rochester
	Corbin, Kendall B.	Rochester
	Costello, Addis C.	Rochester
	Counsellor, Virgil	Rochester
	Courtin, R. F.	Worchester, Mass.
§	Coventry, M. B.	Rochester
	Cowley, H. S.	Kansas City, Mo.
§	Craig, W. M.	Rochester
§†	Crenshaw, J. L.	Sanford, Fla.
†	Crumbley, James J.	Rochester
	Culp, O. S.	Rochester
§	Curtiss, R. K.	Los Angeles, Cal.
§	Dahlin, D. C.	Rochester
§	Daugherty, G. W.	Rochester
§	Davis, A. C.	Rochester
§	Davis, G. D.	Rochester
†	Davis, Harry L.	Rochester
†	Davis, Neal B.	Rochester
‡	Davis, R. E.	Geneva, N. Y.
	Dearing, W. H.	Rochester
	Denton, C.	Rochester
§	Devine, K. D.	Rochester
§	DeWeerd, J. H.	Rochester
§	Diessner, G. R.	Rochester
§	Dillard, P. G., Jr.	Camp Carson, Col.
	Dixon, Claude F.	Rochester
‡	Doan, J. C.	Rochester
	Dobson, Ross A.	Rochester
§	Dockerty, M. B.	Rochester
	Doerr, John C.	Rochester
†	Donin, J. F.	Rochester
§	Donoghue, F. E.	Rochester
§	Douglass, B. E.	Rochester
	Doyle, James R.	Rochester
†	Drips, D. G.	Rochester
§	Dry, T. J.	Rochester
	Duncan, D. K.	Rochester
§	Dunlap, R. W.	Rochester
†	Dunn, Jack, Jr.	Rochester
	DuShane, James W.	Rochester
†	Dykstra, Peter C.	Rochester
§	Eaton, L. M.	Rochester
	Edwards, J. E.	Rochester
§	Elkins, E. C.	Rochester
§	Ellis, F. H.	Rochester
	Emmett, John L.	Rochester
	Epperson, D. P.	Rochester
§	Erich, J. B.	Rochester
§	Erickson, D. J.	Rochester
§	Estes, J. E.	Rochester
§†	Eusterman, G. B.	Rochester
†	Evarts, A. B.	Rochester
†	Evans, Eugene G., Jr.	Rochester
§	Faber, J. E.	Rochester
	Faulconer, Albert, Jr.	Rochester
§	Faulkner, J. W.	Rochester
	Feldman, Floyd M.	New York, N. Y.
	Fergeson, James	Rochester
§	Ferris, D. O.	Rochester
	Figi, Fredk A.	Rochester
	Forney, W. D.	Rochester
	Foss, E. L.	Rochester
§	Freedman, M. A.	Rochester
	Freedman, R. H.	Rochester
	Freeman, J. G.	Fergus Falls
†	Freymann, J. G.	Boston, Mass.
§	Fricke, R. E.	Rochester
	Futch, William D.	Rochester
§†	Gambill, C. M.	Rochester
	Garrett, Chas. N. J. R.	Rochester
§	Gastineau, C. F.	Rochester
‡	Gaunt, W. D.	Rochester
	Geraci, J. E.	Rochester
§	Ghormley, R. K.	Rochester
‡§	Gibb, R. P.	Bellingham, Wash.
§	Giberson, R. G.	Rochester
§†	Giffin, H. Z.	Rochester
§	Gifford, R. W., Jr.	Rochester
†	Gilley, E. Wayne	Rochester
†	Ginsberg, James P.	Rochester
§	Ginsberg, R. L.	Rochester
§	Goldstein, N. P.	Rochester
§	Good, C. A., Jr.	Rochester
§	Goodlad, J. H.	Rochester
§‡	Graham, G. G.	San Diego, Cal.
§	Gray, H. K.	Rochester
†	Green, Robert C., Jr.	Rochester
	Greene, L. F.	Rochester
§	Griffin, G. D. J., Jr.	Rochester
§	Grindlay, J. H.	Rochester
§‡	Gross, J. B.	Rochester
	Gulley, J. L.	Rochester
§	Gustafson, M. B.	Rochester
†	Gwinn, John L.	Rochester
§	Habein, H. C.	Rochester
	Habein, Harold C., Jr.	Rochester
§	Hagedorn, A. B.	Rochester
	Haigler, Frank H., Jr.	Rochester
§	Haines, S. F.	Rochester
§	Hallberg, O. E.	Rochester
§†	Hallenbeck, D. F.	Rochester
§	Hallenbeck, G. A.	Rochester
§	Hanlon, D. G.	Rochester
‡	Hanson, S. M.	Sparta, Wis.
§	Harrington, S. W.	Rochester
§	Harris, L. E.	Rochester
§	Havens, F. Z.	Rochester
	Havens, F. Z., Jr.	Riverside, Calif.
	Hayes, Alvin B.	Rochester
	Heck, F. J.	Rochester
§†	Heilman, D. M. H.	Rochester
§	Heilman, F. R.	Rochester
†	Heimark, John J.	Rochester
	Helden, R. A.	Rochester
†	Helland, G. M.	Spring Grove
†	Helland, J. W.	Spring Grove
§†	Helmholz, M. F.	Rochester
§†	Hempstead, B. E.	Rochester
§	Henderson, E. D.	Rochester
§	Henderson, J. W.	Rochester
	Henderson, Lowell	Rochester
§†	Henderson, M. S.	Rochester
†	Hendricks, Everett D.	Rochester
†	Hepper, Norman G.	Rochester
§	Herbert, G. M., Jr.	Rochester
§	Herrell, W. E.	Rochester
†	Hewitt, Edith	Rochester
§†	Hewitt, R. M.	Rochester
§†	Heyerdale, O. C.	Rochester
§	Hill, J. R.	Rochester
	Hines, E. A., Jr.	Rochester
§	Hodgson, J. R.	Rochester
§‡	Hoffman, M. S.	Rochester
	Holland, C. R.	Rochester
	Hollenhorst, Robert	Rochester
§	Holman, C. B.	Rochester
§‡	Holt, A. H.	Ft. Knox, Ky.
†	Holt, Prescott B.	Rochester
‡§	Hood, R. T.	Rochester
	Horton, B. T.	Rochester
§	Howell, Llewelyn P.	Rochester
§	Huizenga, K. A.	Rochester
§	Hunt, A. B.	Rochester
§	Hunt, William	Rochester
§	Hunter, J. S.	Rochester
‡§	Hunter, R. C.	Dayton, Ohio
§	Ivins, J. C.	Rochester
§	Ivy, J. H.	Rochester
§	Jackman, R. J.	Rochester
†	Jackson, Richard L.	Rochester
	James, J. W.	Rochester
‡§	Jampolis, R. W.	San Francisco, Cal.
§	Janes, J. M.	Rochester
	Johnson, Adelaide McF.	Rochester
§	Johnson, C. E.	Rochester
	Johnson, C. M., Jr.	Rochester
‡	Johnson, Einer W.	Rochester
	Johnson, R. B.	Lanesboro
	Johnston, Edward V.	Rochester
§‡	Jones, G. W.	Ft. Leavenworth, Kan.
	Jones, R. F.	Rochester
	Jones, Rabecliff V.	Rochester
†	Jordan, Stanley	Rochester
§	Joyce, G. L.	Rochester
§	Judd, E. S., Jr.	Rochester
	Karlen, Markle	Rochester
	Kearns, T. P.	Rochester
§	Keating, F. R., Jr.	Rochester
§	Keith, H. M.	Rochester
§†	Keith, N. M.	Rochester
	Kelly, A. H.	Rochester
§	Kennedy, R. L. J.	Rochester
§	Kenney, F. D.	Rochester
‡	Kent, G. B.	Ft. Sam Houston, Texas
§	Kernohan, J. W.	Rochester
§	Kiely, J. M.	Rochester
‡	Kiely, J. P.	San Francisco, Calif.
§	Kierland, R. R.	Rochester
†	Kilby, Ralph A.	Charleston, S. C.
	Kirby, Thomas J., Jr.	Rochester
§	Kirklin, B. R.	Rochester
§	Kirklin, J. W.	Rochester
	Klakeg, Clayton H.	Rochester
§	Kleckner, M. S.	Evanston, Ill.
	Knutson, L. A.	Spring Grove
	Knutsson, K. H.	Rochester
§	Koelsche, G. A.	Rochester
	Kolb, Lawrence	Rochester
§	Kroboth, F. J., Jr.	Rochester
†	Kroll, Harry G.	Rochester
§‡	Krout, R. M.	Rochester
§	Krusen, F. H.	Rochester
§	Kunkel, Wm. M., Jr.	Rochester
§	Kvale, W. F.	Rochester
†	Lacy, Paul E.	Rochester
§	Lake, C. F.	Rochester
	Larrabee, W. F.	Grosse Ile, Mich.
§	Lazarte, J. A.	Rochester
§	Leddy, E. T.	Rochester
§†	Lemon, W. S.	Clifton Falls, Va.
†	Lescoe, Richard J.	Rochester
	Lev, Ralph	Rochester
†	Lewis, B. L.	Rochester
§‡	Lick, I. C.	Rochester
§	Lillie, H. I.	Rochester
	Lillie, John C.	Rochester
§	Lipscomb, P. R.	Rochester
‡	Liss, H. R.	San Francisco, Calif.
§	Litin, E. M.	Rochester
	Lofgren, Carl A.	Rochester
§†	Logan, Archibald H.	Rochester
§	Logan, G. B.	Rochester
§	Love, J. G.	Rochester
§	Lundy, J. S.	Rochester
‡	Lyons, Henry R.	Rochester
§	MacCarty, C. S.	Rochester
§†	MacCarty, W. C.	Rochester
§	MacKenzie, D. A.	Rochester
	MacKinnon, H. N.	Rochester
	Machean, Alexander	Phoenix, Ariz.

§ Madison, M. S............Rochester
§ Magath, T. B............Rochester
Manger, W. M............Rochester
† Mankin, H. T............Rochester
§‡Mankin, H. W............Rochester
§‡Mann, F. C............Rochester
Mann, F. D............Rochester
Mann, Joseph D..........Rochester
§ Mann, R. H............Rochester
‡ Manning, P. R..............Illinois
§‡Markle, G. B., IV.........Virginia
§ Martens, T. G............Rochester
§ Martin, G. M............Rochester
§ Martin, W. J............Rochester
§†Masson, J. C............Rochester
§ Mason, J. K............Rochester
Mathieson, D. R.........Rochester
§ Maxeiner, S. R., Jr.......Rochester
Mayne, J. B..............Rochester
* Maytum, Chas. K.........Rochester
Maxwell, J. P............Rochester
§ Mayo, C. W.............Rochester
McBean, J. B............Rochester
§ McBurney, R. P..........Nopeming
McCarran, S. P..........Rochester
McConahey, W. M., Jr...Rochester
§ McDonald, J. R..........Rochester
‡ McFarlane, J. A..........Rochester
McIntire, S. F............Rochester
McKaig, C. B...........Pine Island
McKee, Robert E.........Rochester
§ McMorris, R. O..........Rochester
§ McWhorter, H. E.........Rochester
† Mears, Thomas W.........Rochester
Medoff, Alvin S...........Rochester
Menges, Charles G. H.....Rochester
§ Merritt, W. A............Rochester
Michael, Isaac E..........Rochester
‡ Miller, J. M..............Indiana
§ Miller, R. D.............Rochester
Miller, R. H.............Rochester
Millikan, Clark H.........Rochester
§ Mills, S. D..............Rochester
Minno, Alexander M......Rochester
§ Moersch, F. P............Rochester
§ Moersch, H. J............Rochester
§Monsour, K. J............Rochester
§ Montgomery, Hamilton....Rochester
Moores, Ken D...........Rochester
§ Morlock, C. G............Rochester
Morris, K. L.............Rochester
Mortensen, J. D..........Rochester
§†Morton, G. H..................
Scott Air Base, Illinois
‡ Mulder, D. W............Rochester
Mussey, Mary E..........Rochester
Mussey, Robert D........Rochester
§ Mussey, W. C..........Urbana, Ill.
‡ Myers, C., III..San Antonio, Texas
§ Meyers, T. T............Rochester
‡ Myre, T. T..........Paducah, Ky.
Nehring, J. P..............Preston
† Nelson, Wm. C..........Rochester
Neuman, H. W............Rochester
Norris, N. T............Caledonia
O'Keefe, Matthew.........Rochester
O'Leary, P. A............Rochester
§‡O'Shaughnessy, E. J......Rochester
§ Odel, H. M.............Rochester
Ogburn, Paul L...........Rochester
§ Olive, J. T., Jr..........Rochester
§ Olsen, A. M.............Rochester
Olson, E. A...........Pine Island
Olson, G. E..........West Concord
Onsgard, L. K............Houston
§ Openshaw, C. R..........Rochester
§ Osborn, J. E.............Rochester
Owen, Charles A. J.......Rochester
§ Owen, H. W............Rochester
Parker, H. L.............Rochester
§ Parker, R. L............Rochester
Parkhill, E. M...........Rochester
§ Parsons, W. B., Jr.......Rochester
Patrick, Robert T.........Rochester
§ Paulson, J. A...........Rochester
§ Paynter, C. R...........Rochester
Pease, G. L.............Rochester
‡ Pemberton, A. H..........Rochester
Pemberton, John des......Rochester
Pender, John Wm.........Rochester
§ Perry, Harold............Rochester
Person, Waldemar W.....Rochester
§ Peters, G. A.............Rochester
§ Petersen, M. C............Rochester
Peterson, W. H.......Spring Valley
Pettersen, George R.......Rochester
Pettet, John R............Rochester
§ Phares, W. S........Pomona, Calif.
† Piper, M. C.......LaCanada, Calif.
Polley, Howard F.........Rochester
§ Pool, T. L...............Rochester
Powers, Fred H..........Rochester
Powers, W. W...........Rochester
§ Prangen, A. D...........Rochester
‡ Pratt, G. F..............Rochester
§ Pratt, J. H., Jr..........Rochester
Price, Richard D..........Rochester
§ Prickman, L. E..........Rochester
§ Priestley, J. T............Rochester
§ Pruitt, R. D.............Rochester
§ Pugh, D. G..............Rochester
Pyle, M. M.............Nopeming
§ Quer, E. A..............Rochester
† Rabens, R. A............Rochester
§ Ralston, D. E...........Rochester
§ Randall, L. M...........Rochester
Randall, Raymond V......Rochester
§ Rasmussen, W. C.........Rochester
Reese, G. A.............Rochester
Reitemeier, R. J..........Rochester
§ Reiter, R. A............Rochester
ReMine, P. G...........Rochester
§ ReMine, W. H., Jr........Rochester
§‡Retter, Richard..Camp Rucker, Ala.
Rice, R. G..........Grand Is., Neb.
§ Ridley, R. W............Rochester
‡ Rigler, R. G........Portsmouth, Va.
Riper, James D...........Rochester
§ Risser, A. F...........Stewartville
Rogers, Arnold G.........Rochester
Rogne, Wm. Gustav...Spring Grove
§ Rome, H. P..............Rochester
§‡Rommness, J. O..........Rochester
§ Rooke, E. D.............Rochester
§ Rosin, J. D..........Baltimore, Md.
Rotnem, O. M............Harmony
§ Routley, E. F................
Saskatoon, Sask., Can.
† Rovelstad, R. A..........Rochester
§ Rucker, C. W............Rochester
Ruff, John D.............Rochester
Rushton, J. G............Rochester
§Rynearson, E. H..........Rochester
Saidy, John T......San Mate, Calif.
§ Salassa, R. M...........Rochester
§†Sanford, A. H...........Rochester
Sauer, Wm. G...........Rochester
§Saunders, B. H., Jr........Rochester
Sayre, G. P.............Rochester
§ Scanlon, P. W...........Rochester
‡§Scheidel, A. M...Des Moines, Iowa
§ Scheifley, C. H..........Rochester
Scherman, Q.............Rochester
§ Schmidt, H. W..........Rochester
Schnugg, Francis J.......Rochester
† Schwarz, Bert E.........Rochester
Schocket, Everett.....Dayton, Ohio
§ Scholz, D. A.............Rochester
§ Scudamore, H. H.........Rochester
§ Seldon, T. H............Rochester
Shick, Richard M.........Rochester
Shockett, Everett..........Rochester
§ Sholl, P. R..............Rochester
Siekert, R. G............Rochester
† Silver, Arthur W.........Rochester
Simmons, W. H...........Rochester
† Simon, Howard B.........Rochester
§ Simonton, K. M..........Rochester
Skaug, H. M.............Rochester
§ Slocumb, C. H...........Rochester
† Smith, Ballard F..........Rochester
Smith, C. F..............Rochester
§†Smith, F. L.............Rochester
§ Smith, H. L.............Rochester
§ Smith, L. A.............Rochester
‡ Smith, M. P.............Rochester
Smith, Newton D.........Rochester
§ Soule, E. H..............Rochester
§‡Spear, H. C.........Houston, Texas
Stauffer, Maurice H.......Rochester
Steinhilber, R. M.........Rochester
† Stevens, Grant M.........Rochester
§ Stickney, J. M............Rochester
§ Stilwell, G. G............Rochester
Storsteen, K. A..........Rochester
§ Stroebel, C. F., Jr.........Rochester
† Struthers, Alfred M.......Rochester
† Stuhler, L. G............Rochester
Svien, H. J..............Rochester
Symmonds, R. E..........Rochester
† Tarantino, Joseph C.......Rochester
† Taub, Robert G..........Rochester
Taylor, D. E.....San Diego, Calif.
Taylor, E. A..............Rochester
Taylor, Gloria A...San Diego, Calif.
§ Taylor, L. M.............Rochester
§‡Thelen, E. P.........Bethesda, Md.
Thompson, G. J...........Rochester
Thompson, O. H., Jr......Rochester
‡Tihen, E. N...Camp Stoneman, Calif.
§ Tillisch, J. H.............Rochester
‡ Todd, J. W..............Rochester
§ Tompkins, R. G..........Rochester
† Tuerk, Milton............Rochester
‡ Uihlein, Alfred...........Rochester
† Ulery, Richard M.........Rochester
Utne, John R.............Rochester
§†Utz, David C............Rochester
§ Van Herik, Martin.......Rochester
§ Van Vleet, M. E.........Rochester
§ Vaughn, L. D...........Rochester
Virnig, Hildegard J.......Rochester
§ Wagener, H. P..........Rochester
Wagoner, James M........Harmony
Wakefield, E. G..........Rochester
§†Wakim, K. G...........Rochester
§ Walters, Waltman........Rochester
‡ Wang, Jun-Chuan.............
Fort Sam Houston, Tex.
‡ Ward, Bert B...........Rochester
§ Ward, L. E..............Rochester
§ Watkins, C. H...........Rochester
Watson, Eleanor..........Rochester
‡§Watson, J. R.............Rochester
‡Waud, R. E.........Ford Ora, Calif.
§ Waugh, J. M.............Rochester
§ Webb, J. H..............Rochester
§ Weber, Harry............Rochester
§ Weed, L. A..............Rochester
‡ Wehr, M. P....Long Island, N. Y.
§ Weir, J. F...............Rochester
Welch, J. S..............Rochester
Wellborn, W. H., Jr.......Rochester
§ Wellman, W. E..........Rochester
Wellner, T. O............Rochester
§ Wente, H. A.............Rochester
Wentzler, James D.............
Montoursville, Pa.
§ Westrup, J. E...........Lanesboro
† White, Roy A.....New Orleans, La.
Wierman, Wm. H........Rochester
† Wilder, Russell M...Bethesda, Md.
† Wilkinson, George R., Jr., Rochester
Williams, George E.......Rochester
Williams, Henry L., Jr....Rochester
‡§Williams, L. B............Germany
† Williams, R. V............Rushford
§ Willius, F. A............Rochester
§ Wilson, R. B............Rochester
‡ Wilson, T. W......Great Lakes, Ill.
§ Wilson, V. O.............Rochester
‡ Wineland, R. E....New York, N. Y.
‡ Winkelmann, Richard.....Rochester
Winterringer, J. R........Rochester
† Wise, Fred E., Jr........Rochester
† Wittchow, A. W..........Rochester
Wolff, John M...........Rochester
Wollaeger, Eric..........Rochester
§ Woltman, H. W. F......Rochester
§†Wood, Harry G...........Rochester
§ Woolner, L. B............Rochester
§ Wright, S. M...........Rochester
‡ Wuest, J. H.............Rochester
§ Young, H. H.............Rochester
‡ Zeller, W. W............Phila, Pa.

PARK REGION DISTRICT AND COUNTY MEDICAL SOCIETY

Douglas, Grant, Otter Tail and Wilkin Counties
Regular meeting date, last Wednesday even numbered months
Annual meeting, December
Number of Members—61

President
Stemsrud, H. L...........Alexandria
Secretary
DeKruif, Hendrik.......Fergus Falls

§ Arndt, H. W...........Detroit Lakes
Baker, J. L.............Fergus Falls
§ Baker, N. H............Fergus Falls
Bergquist, K. E...........Battle Lake
† Blakey, A. R..................Osakis
§ Boline, C. A.............Battle Lake
§ Boyd, L. M...............Alexandria
† Boysen, Peter ....Bemidji
Cain, J. H..................Hoffman
§ Carlson, C. E.............Alexandria
§ Clifford, G. W............Alexandria
§ Combacker, L. C........Fergus Falls
§ Daehlin, Rolf...........Fergus Falls
DeKruif, Hendrik.......Fergus Falls

§ Emerson, E. E................Osakis
†§Estrem, C. O...........Fergus Falls
§ Estrem, R. D...........Fergus Falls
Estrem, R. L............Fergus Falls
Hamlon, John S.........Fergus Falls
Hanson, E. C........New York Mills
Hanson, LeRoy.........Pelican Rapids
† Harris, Evelyn S........Fergus Falls
§ Heiberg, E. A...........Fergus Falls
§ Helseth, H. K.........Pelican Rapids
Hom, Leong Y. W........Battle Lake
§ Jacobson, C. W.........Breckenridge
§ Kevern, J. L.................Henning
§ Korda, H. A..........Pelican Rapids
Leibold, H. H........Parkers Prairie
§ Lewis, A. J.................Henning
§ Lewis, C. W................Henning
Love, F. A....................Carlos
§ Lund, C, J. T...........Fergus Falls
Mortensen, N. G.........Minneapolis
§ Mouritsen, G. J.........Fergus Falls
† Naegeli, Frank..........Fergus Falls
Nelson, David E.........Alexandria
Nelson, Roy A.........Fergus Falls
§ Nelson, W. O. B........Fergus Falls
§ O'Brien, L. T...........Breckenridge
Ostergaard, Erling.........Evansville
Paciotti, Vincent............St. Paul
Parson, E. L. B.........Elbow Lake
Parson, L. R.............Elbow Lake
Patterson, W. L.........Fergus Falls
†§Paulson, T. S..........Fergus Falls
† Randall, A. M................Ashby
* Richter, E. H............Fergus Falls
Rockwood, P. H.........Fergus Falls
† Satersmoen, Theo......Pelican Rapids
Sather, E. R..............Alexandria
§ Schamber, W. F......Parkers Prairie
Schoeneberger, P. B..........Perham
Shaver, Ward...........Fergus Falls
§ Stemsrud, H. L...........Alexandria
Sutton, H. R.................Hoffman
Tanquist, Edwin J.........Alexandria
Thompson, H. B............St. Cloud
Warner, J. J..................Perham
§ Wasson, L. F.............Alexandria
‡§Weyhrauch, R. A......Phoenix, Ariz.
† Wray, W. E................Campbell

RAMSEY COUNTY MEDICAL SOCIETY

Regular meetings, last Monday in every month excepting June, July, August

Annual meeting, last Monday in January

Number of Members—471

President
Donohue, P. F............Saint Paul
Secretary
Hilger, Lawrence D.......Saint Paul

§ Adair, A. F., Jr..........Saint Paul
*§Aherns, A. H.............Saint Paul
†§Aherns, A. E.............Saint Paul
Ahrens, R. M.............Saint Paul
§†Alden, J. F., Jr..........Saint Paul
§ Anderson, R. W...........Saint Paul
§ Arnquist, A. S............Saint Paul
§ Arny, F. P................Saint Paul
§ Arzt, P. K................Saint Paul
§ Aurelius, J. R............Saint Paul
§ Ausman, D. R.............Saint Paul
§ Babb, Frank S............Saint Paul
§ Bacon, D. K..............Saint Paul
Baer, Walter..............Saint Paul
§ Balcome, M. M............Saint Paul
Barnett, J. M.............Saint Paul
Baronofsky, I. D.........Minneapolis
§ Barry, L. W..............Saint Paul
† Barsness, N. O. N.........Saint Paul
Bauer, D. D...............Saint Paul
Bauer, E. L...............Saint Paul
§†Beals, Hugh..............Saint Paul
§ Beech, R. H..............Saint Paul
§ Beek, H. O...............Saint Paul
Beer, J. J................Saint Paul
§ Bell, C. C...............Saint Paul
‡ Bellomo, James.....New York, N. Y.
§ Benepe, J. L.............Saint Paul
† Bennion, P. H..........Isway, Mont.
§ Bentley, N. P............Saint Paul
Bernier, M. J...........No. St. Paul
§ Bernstein, Wm. C.........Saint Paul
§ Bicek, J. F..............Saint Paul
† Binger, H. E..........Phoenix, Ariz.
Black, E. J...............Saint Paul
†§Bock, R. A...............Saint Paul
† Boeckman, N. Egil........Saint Paul
§ Bolender, H. L...........Saint Paul
† Bolin, Robt. C...........Saint Paul
§ Borg, J. F...............Saint Paul
† Bouma, L. R..............Saint Paul
§ Brand, G. D..............Saint Paul
† Bray, E. R...............Saint Paul
§ Briggs, John F...........Saint Paul
§ Broadie, T. E............Saint Paul
§ Brodie, W. D.............Saint Paul
† Brown, J. C.........Los Gatos, Calif.
Bulinski, T. J............Saint Paul
§ Burch, E. P. II..........Saint Paul
† Burch, F. E............Two Harbors
§ Burklund, E. C...........Saint Paul
§ Burlingame, D. A.........Saint Paul
Burmeister, Richard.......Saint Paul
†§Burns, R. M..............Saint Paul
Burton, C. G..............Saint Paul
§ Bush, R. P...............Saint Paul
§ Busher, H. H.............Saint Paul
§ Cain, C. L...............Saint Paul
Callahan, F. F............Saint Paul
§ Carley, W. A.............Saint Paul
§ Carroll, W. C............Saint Paul
Cedarleaf, Cherry B.......Saint Paul
§ Chadbourn, C. R..........Saint Paul
§ Chatterton, C. C.........Saint Paul
§ Christiansen, A..........Saint Paul
§ Clark, H. B., Jr.........Minneapolis
§ Cochrane, B. B...........Saint Paul
Coddon, W. D..............Saint Paul
Cohen, Ellis N............Saint Paul
§ Colby, W. L..............Saint Paul
§ Cole, W. H...............Saint Paul
Coleman, John ....Saint Paul
† Collie, H. G......St. Petersburg, Fla.
§ Connolly, C. J...........Saint Paul
§ Connor, C. E.............Saint Paul
§ Cook, C. K...............Saint Paul
§ Cooper, C. C.............Saint Paul
§ Countryman, R. S.........Saint Paul
§ Craig, D. M..............Saint Paul
Critchfield, L. R.........Saint Paul
Crowley, J. H.............Saint Paul
Crudo, V. D...............Saint Paul
§ Crump, J. W..............Saint Paul
§ Culligan, J. M...........Saint Paul
§ Culver, C. G.............Saint Paul
Davis, Edward.............Saint Paul
Dawson, J. R..............Saint Paul
Decker, C. H..............Saint Paul
§ Derauf, B. I.............Saint Paul
§ Deters, D. C.............Saint Paul
† Dickson, T. H............Saint Paul
Donohue, P. F.............Saint Paul
§ Drake, C. B..............Saint Paul
§ Dunn, J. N...............Saint Paul

§ Earl, G. A...............Saint Paul
§ Earl, J. R...............Saint Paul
§ Edlund, Gustaf ....Saint Paul
Edwards, J. W.............Saint Paul
Edwards, L. G.............Saint Paul
§ Edwards, T. J............Saint Paul
§ Eginton, C. T............Saint Paul
Ely, O. S.............So. Saint Paul
§ Emerson, E. C............Saint Paul
§ Emmons, R. W.............Saint Paul
§ Endress, E. K............Saint Paul
Enroth, O. E..............Saint Paul
† Ernest, G. C. H...St. Petersburg, Fla.
§ Ersfeld, M. P............Saint Paul
† Eshelby, E. C............Saint Paul
Evert, J. A., Jr..........Saint Paul

*†Fahey, E. W..............Saint Paul
Farkas, I. V..............Saint Paul
Fee, J. G.................Saint Paul
Felder, Davitt A..........Saint Paul
Felion, A. J..............Saint Paul
§†Ferguson, J. C...........Saint Paul
§ Fesler, H. H.............Saint Paul
Field, A. H..............Farmington
Fink, D. L................Saint Paul
§ Fisher, D. W.............Saint Paul
§ Flanagan, H. F...........Saint Paul
§ Flannery, H. F...........Saint Paul
Flynn, L. L., Jr..........Saint Paul
† Fogarty, C. W............Saint Paul
§ Fogarty, C. W., Jr.......Saint Paul
§ Fogelberg, E. J..........Saint Paul
§ Foley, F. E. B...........Saint Paul
Forsythe, J. R............Saint Paul
Freeman, C. D., Jr........Saint Paul
Freeman, G. I.............Saint Paul
Friedman, L. L............Saint Paul
§ Fritz, W. L..............Saint Paul
§ Froats, C. W.............Saint Paul
§ Fuller, B. F.............Saint Paul
Furnell, D. O.............Saint Paul
Galligan, John J..........Saint Paul
§ Garbrecht, A. W..........Saint Paul
§ Gardner, W. P............Saint Paul
Garrow, D. M..............Saint Paul
§ Gehlen, J. N.............Saint Paul
§ Ghent, C. H..............Saint Paul
§ Gibbs, E. C..............Saint Paul
Gilkey, S. E..............Saint Paul
§ Gillespie, D. R..........Saint Paul
§ Gleason, W. A............Saint Paul
Goldsmith, J. W...........Saint Paul
§†Goltz, E. V..............Saint Paul
‡ Goltz, N. F..............Saint Paul
§ Grant, H. W..............Saint Paul
§ Gratzek, Thos............Saint Paul
§ Grau, R. K...............Saint Paul
† Gruenhagen, A. P.........Saint Paul

Hall, Barnard ....Saint Paul
§ Hammes, E. M.............Saint Paul
§ Hammes, E. M., Jr........Saint Paul
† Hammond, J. F............Saint Paul
§ Hanson, H. B.............Saint Paul
Harbaugh, John ....Saint Paul
§ Harmon, G. E.............Saint Paul
§ Hartfiel, W. F...........Saint Paul
Hartig, Marjorie..........Saint Paul
§ Hartley, E. C............Saint Paul
§ Hauser, V. P.............Saint Paul
§ Hayes, A. F..............Saint Paul
§ Heck, W. W...............Saint Paul
Hedenstrom, F. G..........Saint Paul
Heilig, William R.........Saint Paul
Henderson, A. J. G...No. Saint Paul
§ Hengstler, W. H..........Saint Paul
§ Hensel, C. N.............Saint Paul
Herman, S. M..............Saint Paul
§ Heron, R. C..............Saint Paul
§ Herrmann, E. T...........Saint Paul
Hertz, M. J...............Saint Paul
§†Hilger, A. W.............Saint Paul
§ Hilger, J. A.............Saint Paul
§ Hilger, L. D.............Saint Paul
Hilker, Marcus D..........Saint Paul
Hiniker, L. P.............Saint Paul
§ Hochfilzer, J. J.........Saint Paul
Hodgson, J. E.............Saint Paul
† Holcomb, O. W............Saint Paul
§ Hollinshead, W. H........Saint Paul
§ Holmen, R. W.............Saint Paul
§ Holt, J. E...............Saint Paul
Hopkins, G. W.............Saint Paul
Howard, M. A..............Saint Paul
‡ Howard, W. S.............Saint Paul
§ Howe, N. W...............Saint Paul
§ Hullsiek, H. E...........Saint Paul
‡§Hullsiek, R. B..........Minneapolis
§ Hultgen, W. J............Saint Paul
Hunter, M. H..............Saint Paul
§ Hurwitz, M. M............Saint Paul

§†Ide, Arthur W............Saint Paul
Ikeda, Kano...............Saint Paul
Ingerson, C. A............Saint Paul

James, Ellery.............Saint Paul
Jannssen, Martin..........Saint Paul
Jarvis, M. A..............Saint Paul
Jesion, J. W..............Saint Paul
§ Johanson, W. G...........Saint Paul
§ Johnson, C. E............Saint Paul
Johnson, Herbert..........Saint Paul
Johnson, R. J.............Saint Paul
§ Jones, E. Mendelssohn....Saint Paul
Jones, R. H..............Minneapolis

§ Kamman, G. R.............Saint Paul
‡ Kaplan, D. H.............Saint Paul
Karon, I. M...............Saint Paul
§ Kasper, E. M.............Saint Paul
‡Katz, L. J.........Long Beach, Calif.
Kavitt, H. H..........Portland, Ore.
Keefe, R. E...............Saint Paul
†§Kelly, J. V...............Saint Paul
§ Kelsey, C. M.............Saint Paul
§ Kenefick, E. V...........Saint Paul
§ Kenyon, T. J.............Saint Paul
§ Kesting, Herman..........Saint Paul
† King, G. L...............Saint Paul
§ Klein, H. N..............Saint Paul
Klein, Jos. ....Saint Paul
§ Knutson, G. E............Saint Paul
Knutson, Robert...........Saint Paul
Koza, D. N................Saint Paul
Krezowski, Thomas.........Saint Paul

§ Kugler, A. A..............Saint Paul
§ Kuske, A. W..............Saint Paul
Kusske, D. R..............Saint Paul
§ Lannin, B. G..............Saint Paul
§ Lannin, D. R..............Saint Paul
*†Larsen, C. L..............Saint Paul
Larson, Eva-Jane ....Saint Paul
Larson, J. T...........So. Saint Paul
Larson, K. R..............Saint Paul
Larson, M. L..............Saint Paul
Lax, Morris H.............Saint Paul
§ Leahy, Bartholomew ......Saint Paul
§ Leavenworth, R. O........Saint Paul
Lee, N. J.......................Tracy
§ Leick, R. M...............Saint Paul
§ Leitch, Archibald.........Saint Paul
§ Lepak, J. A...............Saint Paul
† Lerche, Wm..............Cable, Wis.
§ Leven, N. L...............Saint Paul
§ Leverenz, C. W............Saint Paul
Levin, B. G...............Saint Paul
Levitt, George X..........Saint Paul
§ Lick, C. L................Saint Paul
Lick, Wm. J., Jr..........Saint Paul
Lieberman, N. S........So. Saint Paul
§ Lien, R. J................Saint Paul
Lightbourn, E. L.........Saint Paul
Lilleberg, N. J...........Saint Paul
Lindell, Robt.............Saint Paul
§ Lippman, H. S.............Saint Paul
§ Loken, S. M...............Saint Paul
Lowe, E. R............So. Saint Paul
Lowe, T. A............So. Saint Paul
Lucas, John E.........Seattle, Wash.
§ Lundholm, A. M............Saint Paul
§ Lynch, F. W...............Saint Paul

‡ Mackoff, S. M.............Saint Paul
§ Madden, J. F..............Saint Paul
Madland, R. S.............Saint Paul
Maertz, Wm. F.............Saint Paul
§ Malerich, J. A............Saint Paul
Marks, R. W...............Saint Paul
Marlow, G. V..............Saint Paul
Martin, D. L..............Saint Paul
§ Martineau, J. L...........Saint Paul
Matthews, James H.......Minneapolis
§ McCabe, J. S..............Saint Paul
McCain, D. L..............Saint Paul
McCarthy, J. J............Saint Paul
McCarthy, Wm. R...........Saint Paul
† McClanahan, J. H...White Bear Lake
McClanahan, T. S...White Bear Lake
§ McCloud, C. N.............Saint Paul
§ McEwan, Alexander.........Saint Paul
§ McGroarty, B. J...........Saint Paul
McKenzie, E. E............Saint Paul
* McLaren, J. M............Minneapolis
§ Meade, J. R...............Saint Paul
§ Mears, B. J...............Saint Paul
§ Medelman, J. P............Saint Paul
Melancon, J. F............Saint Paul
Menold, Wm. F.............Saint Paul
Merner, T. B..............Faribault
Merrick, R. L.............Saint Paul
§†Meyerding, E. A...........Saint Paul
Michienzi, L. J...........Saint Paul
Miller, Wm. T.........W. Saint Paul
Miller, Z. R..............Saint Paul
Milnar, F. J..............Saint Paul
§ Moga, John A..............Saint Paul
Molander, H. A............Saint Paul
Monahan, Robert H.........Saint Paul
Mooney, Robert D..........Saint Paul
† Moquin, M. A..............Saint Paul
† Moren, J. A...............Saint Paul
Moriarity, Bernice ....Saint Paul
Moriarity, Cecile R.......Saint Paul
§ Muller, A. E.........No. Saint Paul
Mundahl, H. R.............Saint Paul
§ Murphy, J. T..............Saint Paul

Naegeli, A. E.......Port Beach, Calif.
§ Nash, L. A................Saint Paul
† Nelson, L. A..............Saint Paul
Nimlos, K. O..............Saint Paul
† Nimlos, L. O..............Saint Paul
§ Noble, J. F...............Saint Paul
§ Noble, J. L...............Saint Paul
Nye, Katherine A..........Saint Paul
Nye, Lillian L............Saint Paul

O'Brien, J. C.............Saint Paul
§ O'Connor, L. J............Saint Paul
O'Kane, T. W..............Saint Paul
O'Leary, John B...........Saint Paul
‡ O'Malley, V...............Saint Paul
O'Reilley, B. E...........Saint Paul
§ Ockuly, Orville ....Saint Paul
§ Ogden, Warner.............Saint Paul
§ Ohage, Justus ....Saint Paul
§ Olsen, R. L...............Saint Paul
Olson, C. A...............Saint Paul
§ Ostergren, Edw. W.........Saint Paul
§ Ouelette, A. J............Saint Paul
§ Owens, F. M., Jr..........Saint Paul

Paulson, Wallace..........Saint Paul
Pearson, F. R.............Saint Paul
§ Pearson, M. M.............Saint Paul
Pedersen, A. H............Saint Paul
Peterson, D. B............Saint Paul
§ Peterson, D. H............Saint Paul
§ Peterson, H. O............Saint Paul
Peterson, J. L. E.........Saint Paul
§†Plondke, F. J.............Saint Paul
§ Plotke, H. L..............Saint Paul
Polski, P. G..........So. Saint Paul

Quattlebaum, Frank........Saint Paul

§ Ralph, J. R...............Saint Paul
† Ramsey, W. R..............Saint Paul
Rasmussen, R. C...........Saint Paul
Ravits, H. G..............Saint Paul
§ Rea, Charles E............Saint Paul
Reid, James W.............Saint Paul
§ Richards, E. T. F.........Saint Paul
‡ Richardson, E. J., Jr.....Saint Paul
§ Richardson, R. J..........Saint Paul
Rick, Paul F. W...........Saint Paul
Rinkey, Eugene............Saint Paul
§ Ritchie, W. P.............Saint Paul
§ Ritt, A. E................Saint Paul
Robinson, C. O............Saint Paul
§ Rogers, S. F..............Saint Paul
† Rogin, Norton ....Farmington
Rolig, D. H...............Saint Paul
Rollie, O. O..............Saint Paul
Rosenholtz, B. I..........Saint Paul
§ Rosenthal, Robert.........Saint Paul
§ Roth, G. C................Saint Paul
§ Rothschild, H. J..........Saint Paul
§ Roy, Phil C...............Saint Paul
† Ruhberg, Geo. N.......Tarzona, Calif.
§ Ryan, John J..............Saint Paul
§ Ryan, Jos. M..............Saint Paul

Sandeen, R. M.................Buffalo
§ Sarnecki, M. M............Saint Paul
† Satterlund, V. L..........Saint Paul
§†Savage, F. J..............Saint Paul
§ Schmidtke, R. L...........Saint Paul
Schoch, R. B. J...........Saint Paul
§ Schons, Edward ....Saint Paul
§ Schroeckenstein, H. F.....Saint Paul
§†Schuldt, F. C.............Saint Paul
§ Schulze, A. G.............Saint Paul
Schumacker, J. W........Robbinsdale
§ Schwyzer, H. C............Saint Paul
Schwyzer, Marguerite .....Saint Paul
§ Scott, E. E...............Saint Paul
Sekhon, M. S..............Saint Paul
Sells, Richard J..........Saint Paul
† Senkler, G. E.............Saint Paul
§ Setzer, H. J..............Saint Paul
Shannon, Wm. R............Saint Paul
† Shellman, J. L..Pacific Palisades, Cal.
Short, Jacob..............Saint Paul
Siegel, Clarence..........Saint Paul
‡ Siegel, S. C..............Saint Paul
§ Simons, L. T..............Saint Paul
Singer, B. J..............Saint Paul
§ Skinner, Abbott...........Saint Paul
† Skinner, H. O.............Saint Paul
§ Smisek, E. A..............Saint Paul
Smith, Clyde..............Saint Paul
§ Smith, V. D. E............Saint Paul
§ Snyder, Geo. Wm...........Saint Paul
§ Sohlberg, O. I............Saint Paul
Sommers, Ben..............Saint Paul
§ Sorem, M. B...............Saint Paul
Soucheray, P. H...........Saint Paul
§ Souster, B. B.............Saint Paul
Sowada, Ernest J..........Saint Paul
§†Sprafka, J. L.............Saint Paul
§ Sprafka, J. M.............Saint Paul
§ Steinberg, C. L...........Saint Paul
§ Sterner, D. C.............Saint Paul
†§Sterner, E. G.............Saint Paul
§ Sterner, E. R.............Saint Paul
§ Sterner, J. J.............Saint Paul
Stewart, Alexander ....Saint Paul
§ Stolpestad, A. H..........Saint Paul
§ Stolpestad, H. L..........Saint Paul
§ Strate, G. E..............Saint Paul
Straus, M. L..............Saint Paul
§ Strem, E. L...............Saint Paul
§ Sturley, R. F.............Saint Paul
Swain, F. M...............Saint Paul
Swanson, J. A.............Saint Paul
‡ Swanson, L. J.......West Saint Paul
§ Swendson, J. J............Saint Paul
† Swenson, Donald B.........Saint Paul

§ Teisberg, J. E............Saint Paul
Tetlie, James ....Saint Paul
Thompson, F. A............Saint Paul
Thoreson, M. C. Bernice........
So. Saint Paul
Tiff, C. R................Saint Paul
§ Tongen, L. A..............Saint Paul
§ Tracht, R. R..............Saint Paul
Travis, J. S..............Saint Paul
§ Tregilgas, H. R.......So. Saint Paul

Van Bergen, F. H........Minneapolis
Varco, R. L...............Saint Paul
Veirs, Dean M.............Saint Paul
Veirs, Ruby J. S..........Saint Paul
§ Venables, A. E............Saint Paul

§ Waas, C. W................Saint Paul
§ Walker, A. E..............Saint Paul
§ Walsh, Edw. F.............Saint Paul
§ Walter, C. W..............Saint Paul
§†Ward, Peter D.............Saint Paul
Warren, C. A..............Saint Paul
Watson, P. T..............Saint Paul
Watson, W. H. A...........Saint Paul
§ Watson, W. J..................Newport
Watz, C. E................Saint Paul
§ Webber, F. L..............Saint Paul
§ Weis, B. A................Saint Paul
§ Weisberg, Maurice.........Saint Paul
§ Wenzel, G. P..............Saint Paul
Wesolowski, S. P..........Saint Paul
Westover, D. E............Saint Paul
† Wheeler, M. W............Lake Elmo
† Wilkinson, Stella L..........Newport
† Williams, A. B............Saint Paul
§ Williams, C. K............Saint Paul
§ Williams, J. A............Saint Paul
Wilson, J. A..............Saint Paul
§ Wilson, J. V..............Saint Paul
Winnick, J. B.............Saint Paul
*§Wold, K. C................Saint Paul
§ Wolff, H. J...............Saint Paul
Wolkoff, H. J.............Saint Paul
Word, H. L................Saint Paul
Wurdemann, A. L...White Bear Lake

Youngren, E. R............Saint Paul

Zachman, L. L.............Saint Paul
§ Zimmermann, H. B..........Saint Paul

RED RIVER VALLEY MEDICAL SOCIETY

Kittson, Mahnomen, Marshall, Norman, Pennington, Polk, Red Lake and Roseau Counties

Regular meetings, three—plus extras

Annual meeting, December

Number of Members—70

President
Delmore, John L., Jr.........Roseau
Secretary
Sather, Russell O.........Crookston
§†Adkins, C. M.....Thief River Falls
§ Anderson, W. E..........Clearbrook
‡ Behling, F. L.............Moorhead
§ Behr, O. K...............Crookston
Berge, D. O.................Roseau
Berlin, A. S...............Hallock
† Biedermann, Jacob.Thief River Falls
§ Boyer, G. S..............Crookston
† Bratrud, Edward...Thief River Falls
Bratrud, T. E......Thief River Falls
Brink, A. A................Baudette
Burnett, Clem, F., Jr......Crookston
§ Cameron, J. H............Crookston
§ Covey, K. W..............Mahnomen
§ Dale, L. N..........Red Lake Falls
§ Delmore, J. L...............Roseau
§ Delmore, J. L., Jr..........Roseau
Delmore, R. J...............Roseau
§ Erickson, Eskil............Halstad
§ Feigal, W. M......Thief River Falls
Flancher, L. H...........Crookston
§ Greene, D. E......Thief River Falls
† Henney, Wm. H...........McIntosh
† Hollands, W. H...............Fisher
§ Holmstrom, C. H............Warren
Janecky, A. G.............Baudette

‡ Johnson, H. C.......San Diego, Cal.
Johnson, R. E.......Ah-Gwah-Ching
§ Kinkade, B. R.................Ada
† Kirk, G. P........East Grand Forks
§ Klefstad, L. H...........Greenbush
Kletschk, Harold D.,.Brooklyn, N. Y.
Knutson, G. A..............Hallock
§ Kostick, W. R..............Fertile
§ Loken, Theodore..............Ada
McDonald, W. J..........Crookston
McKaig, A. M.......Red Lake Falls
† Mellby, O. F......Thief River Falls
§ Mercil, W. F.............Crookston
† Nelson, Alfred S.....Baltimore, Md.
† Nelson, H. E.............Crookston
Nelson, Kenneth L.,........Warroad
Nickerson, N. D...........Fairmont
§ Norman, J. E.............Crookston
O'Leary, J. H.....Thief River Falls
§ Oppegaard, C. L..........Crookston
*§Oppegaard, M. O.........Crookston
Parker, Philip.....Thief River Falls
§ Puumala, E. E.............Warren
† Quigley, W. P......Brooklyn, N. Y.
§ Reff, A. R................Crookston
§ Roholt, C. L..............McIntosh
‡§Roholt, H. B...............Fosston
Rowell, Forrest A..Thief River Falls
† Ryland, A. D..........Minneapolis
Sather, E. L...............Fosston
§ Sather, G. A...............Fosston
§ Sather, R. N...............Fosston
§ Sather, R. O..............Crookston
§ Skogerboe, R. B............Karlstad
Stadem, Clifford........Twin Valley
§ Starekow, M. D....Thief River Falls
§ Stewart, D. E............Crookston
‡ Stone, Norman F.......Chicago, Ill.
Thysell, Harold..........Crookston
*†Torgerson, W. B..............Oklee
§ Uhley, C. G..............Crookston
§ Van Rooy, G. T...Thief River Falls
Watson, R. M..............Morris
Wheeler, G. S...............Roseau
Wikoff, Howard..........Crookston
† Wiltrout, I. G.................Oslo

RENVILLE-REDWOOD COUNTY MEDICAL SOCIETY

Regular meeting, second Tuesday of each month
Annual meeting, December

Number of Members—19

President
Cosgriff, J. A., Jr.............Olivia
Secretary
Pierce, R. B................Renville
§ Alcorn, W. J...............Wabasso
§ Anderson, C. A..............Hector
‡§Anderson, D. C..........Lamberton
§†Brand, W. A.........Redwood Falls
Cosgriff, J. A.................Olivia
Cosgriff, James A., Jr.........Olivia
Dahle, Manford B.............Olivia
Diessner, A. W.......Redwood Falls
§ Dordal, John..........Sacred Heart
§ Fawcett, A. M..............Renville
*†Gaines, E. C...........Buffalo Lake
§ Hinderaker, H. P........Bird Island
§ Johnson, O. H....Norfolk, Nebraska
§ Johnson, W. E..............Morgan
§ Knoche, H. A., Jr...........Morgan
Lenz, J. R..................Morton
‡ McLeod, J. J..................Japan
Nelson, Glenn E............Fairfax
Pierce, Robert B............Renville
† Preisinger, J. W............Renville

RICE COUNTY MEDICAL SOCIETY

Regular meeting, third Tuesday of every month
Annual meeting, October

Number of Members—35

President
Street, Bernard...........Northfield
Secretary
Meyer, Paul F............Faribault
Beaton, J. Gordon........Northfield
§ Bruhl, H. H...............Faribault
§ Buesgens, R. H..........Waterville
§†Dungay, N. S............Northfield
§ Engberg, E. J..............Faribault
Francis, D. W...........Morristown
† Hanson, A. M.............Faribault
§ Hanson, J. W.............Northfield
† Huxley, F. R..............Faribault
§ Kennedy, G. L.............Faribault
§ Kolars, J. J...............Faribault
§ Kucera, L. B..............Lonsdale
§ Lende, Norman...........Faribault
† Lexa, F. J................Lonsdale
§ Maertz, R. W.............Faribault
§ Mears, R. F.............Northfield
Meyer, F. C.................Kenyon
Meyer, P. F...............Faribault
Meyer, Robert P..........Faribault
§ Moses. R. R...............Kenyon
Navratil, D. R.........Montgomery
§ Nielson, A. M............Northfield
§ Nuetzman, A. W..........Faribault
§ Orr, Burton A.............Faribault
Petersen, D. H...........Northfield
§ Robilliard, C. M...........Faribault
† Rohrer, Christian..Des Moines, Iowa
Rumpf, C. W.............Faribault
Rysgaard, G. M...........Northfield
§ Stevenson, F. W..........Faribault
§ Street, Bernard...........Northfield
§ Studer, D. J...............Faribault
§ Traeger, C. A.............Faribault
§ Weaver, P. H.............Faribault
§ Wilson, W. E.............Northfield

ST. LOUIS COUNTY MEDICAL SOCIETY

Carlton, Cook, Itasca, Lake and St. Louis Counties
Regular meetings, second Thursday of each month
Annual meeting, January

Number of Members—255

President
Buckley, R. P...............Duluth
Secretary
Van Ryzin, D. J.............Duluth
§ Abraham, A. L..............Duluth
§ Adams, B. S...............Hibbing
Addy, E. R..................Gilbert
Ager, E. A..................Duluth
Ahrens, C. F................Duluth
† Arhelger, Stuart........Minneapolis
§ Arko, J. L.................Hibbing
§ Athens, Alvin G............Duluth
§ Backus, R. W............Nopeming
§ Bagley, C. M...............Duluth
Bagley, E. C................Duluth
§ Bagley, Wm. R.............Duluth
§ Baich, V. M..................Bovey
§ Bakkila, H. E...............Duluth
§ Bardon, Richard............Duluth
§ Barker, J. D................Duluth
Barney, L. A................Duluth
§ Barrett, E. E...............Duluth
§ Becker, F. T................Duluth
Benell, O. E...............Virginia
Bepko, Marie K............Cloquet
Berdez, G. L................Duluth
§ Bergan, R. O................Duluth
Bianco, A. J................Duluth
§†Bianco. A. J., Jr............Duluth
† Binet, H. E..........Grand Rapids
§ Blackmore, S. C...........Biwabik
§ Bloom, J....................Duluth
Bolstad, Owen C............Duluth
Bolz, J. A............Grand Rapids
Boman, P. G................Duluth
§ Bowen, R. L...............Hibbing
† Boyer, S. H.................Duluth
§ Boyer, S. H., Jr.............Duluth
§ Braun, O. C.........Grand Rapids
§ Bray, P. N..................Duluth
‡§Brooker, W. J...........New York
§ Buckley, R. P...............Duluth
§ Butler, J. K...............Cloquet
Cantwell, Wm. F..International Falls
Chapman, T. L..............Duluth
§ Chermak, F. G...International Falls
§ Christensen, C. H...........Duluth
§ Clark, C. L.................Duluth
Clark, E. A.................Duluth
§ Clark, I. T..................Duluth
§ Coll, J. J....................Duluth
† Collins, A. N..........Moose Lake
§ Conley, F. W...............Duluth
Cope, H. E.................Virginia
*§Coventry, Wm. A...........Duluth
§ Coventry, Wm. D...........Duluth
Detjen, E. D................Bigfork
§ Dickson, Franklin H., Jr.....Proctor
Dittrich, R. I................Duluth
Doyle, G. C.................Duluth
Dwyer, John J...............Duluth
§ Eckman, P. F...............Duluth
§ Eckman, R. J...............Duluth
§†Ekblad, J. Wm..............Duluth
Eklund, C. D................Duluth
§ Elias, Frank J...............Duluth
§ Emmanuel, Karl Wm.........Duluth
Eppard, R. M...............Cloquet
Erickson, G. P.............Hibbing
Erskine, G. N.........Grand Rapids
§ Estrem, T. A...............Hibbing
Evensta, John B......Grand Rapids
§ Fawcett, K. R...............Duluth
§ Fellows. M. F...............Duluth
Ferrell, C. R..........Grand Rapids
§ Feuling, J. C..........Grand Rapids
§ Fisher, M. McC..............Duluth
§ Fisketti, Henry..............Duluth
§ Flynn, Bernard F.,..........Hibbing
Fredericks, M. G............Duluth
Fuller, Josiah ....Duluth
§ Gillespie, M. G. ....Duluth
§ Goldish, D. R...............Duluth
Goodman, Chase............Virginia
§ Gowan, L. R.................Duluth
† Graham, Archibald W.,....Chisholm
§ Grahek, J. P....................Ely
§ Grinley, A. V.........Grand Rapids
§ Haavik, J. E.................Duluth
§ Halbert, J. J.................Duluth
§†Halliday, P. V..........Minneapolis
Halper, Bernard.............Hibbing
† Haney, Claude L............Duluth
Hansen, R. E.....Marysville, Calif.
§ Hanson, E. O...............Carlton
§ Harris, C. N...............Hibbing
§ Hatch, W. E.................Duluth
Hayes, M. F.............Nashwauk
§ Hedberg, G. A............Nopeming
Heiam, Wm. C.................Cook
Hildebrand, J. E............Bemidji
§ Hilding, A. C................Duluth
Hill, F. E....................Duluth
Hirschboeck, F. J............Duluth
§ Hoff, H. O...................Duluth
§ Houkom, S. S...............Duluth
Hutchinson, H.........Moose Lake
Indihar, John E............Virginia

Irwin, Homer R............Hibbing
§ Jacobson, Clarence.........Chisholm
§ Jacobson, F. C...............Duluth
§ Jensen, T. J................Duluth
§ Jeronimus, H. J.............Duluth
§ Jessico, C. M...............Duluth
§ Joffe, H. H. ....Virginia
Johnson, Edward...........Virginia
§ Johnson, K. E..............Duluth
§ Johnsrud, L. W...........Hibbing
§†Johnston, R. O............Hibbing
Jolin, F. M..................Bovey
‡ Karges, L. E..Camp Atterbury, Ind.
Kelley, Walter..............Duluth
§ Kelly, A. C................Duluth
Kelly, R. T.............Nashwauk
§‡Keyes, R. W....................Ely
§ Klein, Harry...............Duluth
§ Klein, Wm. A..............Duluth
§ Knapp, F. N................Duluth
§ Knoll, W. V.................Duluth
§ Kohlbry, C. O..............Duluth
Koskela, Lauri.Shaker Heights, Ohio
§ Kotchevar, F. R.............Eveleth
Kozberg, Oscar.........Moose Lake
§ Krueger, V. R...........Nopeming
LaBree, R. H................Duluth
§†Laird, A. T.................Duluth
§ Latterell, K. E..............Duluth
Law, Harrison E...........Virginia
Lepak, F. J..................Duluth
§ Litman, S. N................Duluth
§ Lovshin, W. C.............Eveleth
§†Luth, D. V. ....Minneapolis
MacDonald, Roger A.....Little Fork
§ MacFarlane, P. H.........Chisholm
§ MacRae, G. C..............Duluth
§ Magney, F. H...............Duluth
‡ Magraw, R. M..........Minneapolis
§ Malmstrom, J. A...........Virginia
† Marcley, W. J..........Minneapolis
§ Martin, W. C................Duluth
§ Mayne, R. M............Nopeming
† McCarty, P. D....................Ely
† McCoy, M. K...............Duluth
† McDonald, A. L............Duluth
§ McDonald, O. G............Duluth
§ McHaffie, O. L............Duluth
§ McKenna, M. J.......Grand Rapids
§ McLeod, J. L.........Grand Rapids
§ McNutt, J. R...............Duluth
Mead, C. H..................Duluth

§ Merriman, L. L.............Duluth
‡ Meyer, J. O..........Grand Rapids
§ Minty, E. W.................Duluth
*§Moe, R. J....................Duluth
Moe, Thos..............Moose Lake
§ Moehring, H. G.............Duluth
Mollers, T. P...............Soudan
Monroe, P. B...............Cloquet
Monserud, N. O.............Cloquet
§ Morsman, L. W............Hibbing
Moyer, J. B..................Duluth
§ Munson, M. S.............Barnum
§ Murray, R. A..............Hibbing
§ Neff, W. S.................Virginia
§ Nelson, R. L................Duluth
§ Nicholson, M. A............Duluth
Nisius, George F.............Duluth
Norberg, C. E..............Cloquet
§ Nutting, R. E...............Duluth
§ Olson, A. E.................Duluth
Olson, A. O..................Duluth
§ O'Neill, J. C...............Duluth
‡ Paciotti, V. J...............St. Paul
§ Papermaster, Ralph....Two Harbors
† Parker, O. W................Duluth
Parson, E. I..................Duluth
§ Pasek, A. W...............Cloquet
Pasek, E. A...........Chisago City
§ Patch, O. B.................Duluth
† Pearsall, R. P.............Virginia
§ Pedersen, R. C.............Duluth
Pennie, D. F. V.............Duluth
Peterson, E. N............Virginia
§ Peterson, J. H..............Duluth
§ Pierce, J. R...............Virginia
§ Power, J. E.................Duluth
Puumala, R. H.............Cloquet
§ Raadquist, C. S............Hibbing
Raattama, John...........Keewatin
Rajala, Arnold........Grand Rapids
§ Reed, Paul................Virginia
§ Rokala, H. E..............Virginia
§†Rood, D. C.....Santa Barbara, Calif.
Rowe, O. W..................Duluth
Rowles, E. K.............Coleraine
§ Rudie, P. S.................Duluth
Rukavina, John G...........Hibbing
§ Runquist, J. M..............Duluth
Ryan, Wm. J.................Duluth
§ Sach-Rowitz, A.........Moose Lake
§ Salter, R. A...............Virginia
Sandell, S. T.............Nopeming

‡ Sanford, J. B....Battle Creek, Mich.
§ Sarff, O. E...................Duluth
Sax, M. H....................Duluth
Sax, S. G.....................Duluth
Schirber, M. J.........Grand Rapids
§ Schmid, J. F................Duluth
§ Schneider, L. E.............Duluth
†§Schroder, C. H.....Pottstown, Penn.
Schweiger, T. R............Hibbing
Seashore, R. T...............Duluth
§ Sher, D. A.................Virginia
§ Siegel, J. S................Virginia
§ Sinamark, Andrew..........Hibbing
Sisler, C. E...........Grand Rapids
§ Smith, C. M.................Duluth
Smith, W. R..........Grand Marais
Snyker, O. E....................Ely
§ Spang, A. J..................Duluth
§ Spang, J. S..................Duluth
Spang, William M...........Duluth
§‡Strandjord, N. M...New York, N. Y.
§†Strathern, M. L...............Gilbert
§ Strauss, E. C................Duluth
§ Strewler, G. J...............Duluth
§ Strobel, Wm. G.............Duluth
§ Sutherland, H. N................Ely
§ Swedberg, Wm. A...........Duluth
§ Swenson, A. O..............Duluth
§ Teich, K. W.................Duluth
§ Terrell, B. J..............Nopeming
Tetlie, J. P.....Camp Carson, Colo.
Thiem, C. E.................Hibbing
Tingdale, Carlyle...........Hibbing
§ Tosseland, N. E.............Duluth
§ Tuohy, E. L.................Duluth
§ Urberg, S. E................Duluth
Van Ryzin, D. J............Duluth
‡ VanValkenberg, J. D............
New York, N. Y.
§ Walder, H. J................Duluth
† Walker, A. E................Duluth
§ Wallace, M. O..............Duluth
Walter, F. H.....International Falls
§ Wells, A. H.................Duluth
§ Wheeler, D. W..............Duluth
§ Williams, B. F. P...........Duluth
Winter, J. A..................Duluth
†§ Ylitalo, W. H...........Rochester
§ Young, T. O................Duluth
‡ Zupanc, Edward................
San Francisco, Calif.

SCOTT-CARVER COUNTY MEDICAL SOCIETY

Regular meetings, second Tuesday of each month
Annual meeting, June
Number of Members—30

President
Schimelpfenig, G. T..........Chaska
Secretary
Rynda, E. R............New Prague

Bratholdt, James.........Watertown
† Buck, F. H..............Shakopee
§ Cervenka, C. F.........New Prague
§ Doherty, E. M.........New Prague
§ Hebeisen, M. B.............Chaska
Heinz, Ivy B..............Shakopee
Heinz, L. H...............Shakopee

§ Juergens, H. M.........Belle Plaine
† Juergens, J. L..........Belle Plaine
‡ Kline, R. F............Montgomery
§ Kortsch, F. P............Prior Lake
§ Kucera, S. T.............Northfield
‡ Larson, Laren...........Watertown
† Martin, T. P..............Arlington
Nagel, H. D................Waconia
Ninneman, N. N...........Waconia
† Novak, E. E...........New Prague
Olson, C. J............Belle Plaine
§ Pearson, B. F.............Shakopee

§†Pearson, R. T.............Shakopee
Pogue, R. E.............Watertown
§ Ponterio, J. E............Shakopee
Rieschl, Elizabeth K.........Jordan
§ Rynda, E. R...........New Prague
† Sanford, J. A................Savage
§ Schimelpfenig, G. T.........Chaska
§ Simons, B. H................Chaska
Stahler, P. A.................Jordan
§†Westerman, Alvin......Montgomery
§ Westerman, F. C.......Montgomery

SOUTHWESTERN MINNESOTA MEDICAL SOCIETY

Cottonwood, Jackson, Murray, Nobles, Pipestone and Rock Counties
Regular meetings, on call
Annual meetings, on call
Number of Members—66

President
Wells, W. B.................Jackson
Secretary
Heiberg, O. M.........Worthington

Ahrens, H. G..........Worthington
* Anderson, O. W............Luverne
§ Arnold, E. W.................Adrian
Bader, J. L...................Slayton
§ Balmer, A. I..............Pipestone
§ Basinger, H. P.............Windom
Basinger, H. R......Mountain Lake
§ Beckering, Gerrit..........Edgerton
§ Benjamin, W. G...........Pipestone
Bofenkamp, F. W..........Luverne
Boone, E. S.................Luverne
† Brown, A. H..............Pipestone
Brzica, S. M...........Worthington
Buresh, Ken. L..........Westbrook
Carlson, J. V............Westbrook
§ Christiansen, H. A..........Jackson
§ Chunn, S. S...............Pipestone
† DeBoer, Hermanus........Edgerton
Doman, V. W.............Lakefield

Doms, Vernon A........Elbow Lake
§ Hallin, R. P...........Worthington
§ Halloran, W. H.............Jackson
§ Halpern, D. J..............Brewster
§ Harrison, P. W.........Worthington
§ Heiberg, O. M.........Worthington
§ Hoyer, L. J................Windom
§ Karleen, B. N..............Jackson
§ Kilbride, E. A..........Worthington
Koenecke, Fred H., Jr.....Lakefield
§ Kotval, R. J...............Pipestone
§ Laikola, L. A.................Adrian
§ Lohmann, J. G............Pipestone
§ Maitland, E. T..............Jackson
† Manson, F. M..........Worthington
§ Martin, A. C................Luverne
§ Minge, R. K...........Worthington
§ Nealy, D. E...................Adrian
§ Nelson, C. A...........Worthington
Nickerson, J. R.........Heron Lake
§ Nywall, D. D...............Slayton
§ Pankratz, P. J.......Mountain Lake
§ Patterson, H. D.............Slayton
§ Paulson, Elmer.........Worthington

‡ Philip, David R.............Windom
§ Pierson, R. F................Slayton
§ Piper, W. A.........Mountain Lake
Plucker, Milton W........Clarkfield
Ritzinger, Frederick.......Lakefield
§ Robinett, R. W.........Worthington
§ Rose, J. T.................Lakefield
Sawtell, Robert R............Jeffers
§ Schade, F. L...........Worthington
§ Schutz, E. S.........Mountain Lake
§ Sherman, C. L..............Luverne
§ Slater, S. A...........Worthington
§ Sogge, L. L................Windom
§ Stam, John............Worthington
Stanley, C. R..........Worthington
Sterrie, Norman A.....Worthington
Stevenson, B. M...............Fulda
§ Stratte, H. C...............Windom
‡ Watkins, J. A..............Windom
§ Wells, W. B................Jackson
Williams, Chas. A.........Pipestone
† Williams, L. A........Minneapolis
§ Williamson, H. A.......Heron Lake
Wolff, H. B.........Camdon, Conn.

STEARNS-BENTON COUNTY MEDICAL SOCIETY

Regular meeting, third Thursday of each month
Annual meeting, December

Number of Members—62

President
Gaida, Joseph..............St. Cloud
Secretary
Clark, H. B................St. Cloud

§ Anderson, E. M...........St. Cloud
Andrews, Bernice F.....Holdingford
§ Baumgartner, F. H..........Albany
§ Beuning, J. B.............St. Cloud
† Brigham, C. F., Sr........St. Cloud
§ Brigham, C. F., Jr.........St. Cloud
† Broker, H. M...........Minneapolis
‡§Buscher, J. C.............St. Cloud
Cesnik, R. J..............St. Cloud
§ Clark, H. B...............St. Cloud
Cleaves, W. D..........Sauk Centre
§ Donaldson, C. S...........St. Cloud
DuBois, J. F., Sr.......Sauk Centre
DuBois, J. F., Jr.......Sauk Centre
Engstrom, G. F............Belgrade
Evans, Leslie..........Sauk Rapids
Fidelman, N. E...............Foley
§ Fleming, T. N............St. Cloud
*§Friesleben, Wm.........Sauk Rapids
§ Gaida, J. B................St. Cloud
§ Goehrs, G. H.............St. Cloud
† Goehrs, H. W.............St. Cloud
Grant, J. C............Sauk Centre
§ Halenbeck, P. L..........St. Cloud
Henry, J. E.................Milaca
Hoehn, David..........Holdingford
§ Jones, R. N...............St. Cloud
Keith, Paul J...............Milaca
§ Kelly, J. F............Cold Spring
*§Koop, S. H...............Richmond
§ Kuhlmann, L. B............Melrose
† Lewis, C. B..............St. Cloud
§ Libert, J. N..............St. Cloud
‡ Lindeman, R. J....Montgomery, Ala.
§ Luckemeyer, C. J..........St. Cloud
§ Mahowald, Aloys.......Fergus Falls
§ McDowell, J. P...........St. Cloud
Meyer, A. A...............Melrose
§ Milhaupt, E. N...........St. Cloud
§ Musachio, N. F...............Foley
Myre, C. R............Paynesville
§‡Neils, V. E...........Sauk Rapids
Nietfeld, Aloys.........Sauk Centre
§ Nessa, C. B..............St. Cloud
§ O'Keefe, J. P.............St. Cloud
Peterson, R. T...........St. Cloud
§ Phares, O. C.............St. Cloud
§ Raetz, S. J............Maple Lake
§ Reif, H. J................St. Cloud
§ Richards, W. B...........St. Cloud
§ Sandven, N. O.........Paynesville
Schatz, F. J..............St. Cloud
† Schmitz, Everett J....Seattle, Wash.
† Sherwood, G. E............Kimball
†§Simon, T. R...............St. Cloud
Sisk, H. E................St. Cloud
Stangl, P. E..............St. Cloud
VanVeet, Francis.........St. Cloud
Veranth, L. A.............St. Cloud
§ Walfred, K. A............St. Cloud
Wenner, W. T.............St. Cloud
† Wetzel, E. V.............St. Cloud
§ Wittrock, L. H............Watkins
Zachman, A. H.............Melrose

STEELE COUNTY MEDICAL SOCIETY

Regular meetings, called by the officers
Annual meeting, February

Number of Members—22

President
Wilkowske, R. J..........Owatonna
Secretary
Schaefer, J. F............Owatonna

§ Anderson, F. C...........Owatonna
§ Arnesen, J. F.............Owatonna
§ Dewey, D. H..............Owatonna
Ertel, E. Q................Ellendale
§ Fischer, J. R......Blooming Prairie
§ Halvorsen, D. K..........Owatonna
Hartung, E. H............Claremont
Kulstad, O. S........Dodge Center
Kurtin, Joseph J....Blooming Prairie
Kurtin, H. J.......Blooming Prairie
§ Lundquist, C. W..........Owatonna
§ McEnaney, C. T..........Owatonna
§ McIntyre, J. A............Owatonna
§ Melby, Benedik....Blooming Prairie
† Morehead, D. E...........Owatonna
§ Nelson, E. J...............Faribault
§ Olson, A. J................Owatonna
§ Roberts, O. W............Owatonna
§ Schaefer, J. F.............Owatonna
Senn, E. W...............Owatonna
§ Stransky, T. W...........Owatonna
§ Wilkowske, R. J..........Owatonna

UPPER MISSISSIPPI MEDICAL SOCIETY

Aitkin, Beltrami, Cass, Clearwater, Crow Wing, Hubbard, Koochiching, Lake of the Woods, Morrison, Todd and Wadena Counties
Regular meetings quarterly
Annual meeting, January

Number of Members—93

President
Will, C. B...................Bertha

Secretary
Badeaux, G. I..............Brainerd

§ Anderson, W. W...........Brainerd
§ Badeaux, G. I..............Brainerd
§ Beise, R. A................Brainerd
Bender, J. H..............Brainerd
Benson, A. H...........Little Falls
Borgerson, A. H........Long Prairie
‡ Brown, H. M.................Walker
Cardle, G. E...............Brainerd
Closuit, F. C.................Aitkin
Cook, J. M..................Staples
§ Coombs, C. H............Cass Lake
† Corrigan, J. E..............Spooner
Craig, C. C.......International Falls
§ Crow, E. R.......Hot Springs, S. D.
Cushing, R. L.............Brainerd
Davis, Lloyd T.............Wadena
§ Davis, Luther F............Wadena
Davis, Thos. L., Jr.........Wadena
DeWeese, W. J.............Bemidji
Eiler, John.............Park Rapids
§ Erickson, A. O.........Long Prairie
Fitzsimons, Wm. E.........Brainerd
§ Fortier, G. M. A........Little Falls
Franklin, G. W...........Northome
Garlock, A. V..............Bemidji
Garlock, D. H..............Bemidji
‡ Garlock, G. L...............Bemidji
Ghostley, Mary C...........Puposky
† Gilmore, Rowland.........Crookston
Griffin, John, Jr........... Bemidji
*†Grogan, John S.............Wadena
Groschupf, T. P............Bemidji
Grose, F. N................Clarrissa
Haimer, W. B...............Wadena
Halme, W. B................Wadena
§ Hanover, R. D....International Falls
Hartjen, J. K...............Bemidji
Healy, R. T....................Pierz
‡ Heine, G. W.............Little Falls
Hendricks, E. J..........Saint Paul
Higgs, W. W...........Park Rapids
‡ Hoganson, D. E............Bemidji
† House, Z. E.........Burbank, Calif.
§ Houston, D. M.........Park Rapids
Hubbard, O. E.............Brainerd
† Johnson, C. E............Saint Paul
Johnson, D. L..........Little Falls
† Johnson, E. W.............Bemidji
§ Kanne, E. R...............Brainerd
Kelly, J. H..................Wadena
Kinports, E. B...International Falls
§ Knight, E. G..............Swanville
Larson, L. J.................Bagley
Lee, Hubert W............Brainerd
Leggett, Elizabeth..........Bemidji
§ Lenarz, A. J............Browerville
Longfellow, Helen W.......Brainerd
Lund, W. J..................Staples
Lundsten, L. C.............Bemidji
§ Marshall, C. M...............Crosby
McCann, D. F...............Bemidji
‡ McGreary, M.D......Oceanside, Calif.
McLane, W. O.............Brainerd
Mosby, M. E..........Long Prairie
§ Mulligan, A. M............Brainerd
Nelson, N. P............Minneapolis
§ Nixon, J. B..................Crosby
Olson, Lillian A.....Ah-Gwah-Ching
Palmer, H. A.............Blackduck
Parker, C. W...............Wadena
§ Parker, W. E.................Sebeka
Petraborg, H. T..............Aitkin
Pierce, C. H................Wadena
§ Quanstrom, V. E...........Brainerd
Ringle, O. F.................Walker
§ Rozycki, A. T............Pine River
* Rutherford, W. C...........Brainerd
Sanderson, A. G..............Anoka
Schmitz, G. P...........Little Falls
‡ Schwyzer, Arnold G..Ah-Gwah-Ching
Simmons, E. J...........Saint Paul
Skaife, William F........Little Falls
§ Stein, R. J.....................Pierz
‡ Stoy, R. A..............Little Falls
§†Thabes, J. A., Sr...........Brainerd
Thabes, J. A., Jr...........Brainerd
Vandersluis, C. W..........Bemidji
§ Watson, A. M.............Royalton
Watson, Percy T..........Northfield
§ Watson, S. W..............Royalton
Whittemore, D. D..........Bemidji
§ Will, C. B....................Bertha
§ Will, W. W...................Bertha
Williams, M. M.....Ah-Gwah-Ching
Wingquist, C. G..............Crosby
‡ Zeigler, Charles M.......Pine River

WABASHA COUNTY MEDICAL SOCIETY

Annual meeting, first Thursday after the first Monday in October
Other meetings as called by the President
Number of Members—15

President
Bayley, E. C............Lake City
Secretary
Wilson, W. F............Lake City
§ Bayley, E. C............Lake City
§ Bouquet, B. J.............Wabasha
§ Bowers, R. N............Lake City
Collins, J. S..............Wabasha
§ Ekstrand, L. M...........Wabasha
§ Ellis, E. W..................Elgin
§ Flesche, B. A...........Lake City
§ Gjerde, W. P............Lake City
Glabe, R. A..............Plainview
§ Mahle, D. G.............Plainview
§ Ochsner, C. G............Wabasha
† Replogie, W. H...Los Angeles, Calif.
‡ Vaughn, C. G., Ft. Leonard Wd., Mo.
‡ Wellman, T. G........Clinton, Iowa
† Wilson, W. F............Lake City

WASECA COUNTY MEDICAL SOCIETY

Regular meetings, as decided
Annual meeting, January
Number of Members—10

President
Swenson, O. J.............Waseca
Secretary
Normann, S. T.............Waseca
§ Davis, R. D................Waseca
Florine, Martin..........Janesville
§†Gallagher, B. J.............Waseca
‡ Gallagher, W. B.....Vienna, Austria
§ Hottinger, R. C..........Janesville
§ McIntire, H. M............Waseca
§ Normann, S. T.............Waseca
§ Oeljen, S. C. G.............Waseca
§ Olds, G. H..........New Richland
§ Swenson, O. J.............Waseca
*§Wadd, C. T..............Janesville

WASHINGTON COUNTY MEDICAL SOCIETY

Regular meetings, second Tuesday in each month
Annual meeting, November
Number of Members—19

President
Johnson, Ray G..........Stillwater
Secretary
Carlson, R. E............Stillwater
§ Carlson, R. E............Stillwater
Fosbender, Herman........Hastings
§†Haines, J. H.............Stillwater
Holcomb, Joel T., Marine-on-St. Croix
Hooper, Worth............Hastings
Humphrey, W. R.........Stillwater
§ Jenson, J. E..............Stillwater
§ Johnson, R. G............Stillwater
Josewski, R. J.............Stillwater
§ Juergens, M. F...........Stillwater
Kulzer, Norbert...........Hastings
§ McCarten, F. M..........Stillwater
Mensheha, Nicholas.....Forest Lake
Peck, Lewellyn R..........Hastings
† Poirier, Jos. A..........Forest Lake
Ruggles, G. M..........Forest Lake
§ Sherman, C. H..............Bayport
§ Stuhr, J. W...............Stillwater
Van Meier, Henry.........Stillwater

WEST CENTRAL MINNESOTA MEDICAL SOCIETY

Big Stone, Pope, Stevens and Traverse Counties
Regular meetings, first Wednesday in March, May, September and November
Annual meeting, first Wednesday in November
Number of Members—32

President
Gericke, J. T.............Glenwood
Secretary
Plasha, M. K.............Glenwood
§ Arneson, A. I.................Morris
§ Barnett, G. L.............Graceville
§ Behmier, F. W..............Morris
§ Bergan, Otto................Clinton
† Bolsta, Charles..........Ortonville
§ Bucher, F. D.............Starbuck
Dahle, M. B..................Olivia
§†Eberlin, E. A............Glenwood
§ Eide, O. A...............Hancock
§ Elsey, E. M..............Glenwood
† Elsey, J. R...............Glenwood
† Fitzgerald, E. T.......Rialti, Calif.
§ Gericke, J. T............Glenwood
§ Giesen, A. F..............Starbuck
Hedemark, H. H.........Ortonville
Hedemark, T. A.........Ortonville
§ Karn, J. F...............Ortonville
§ Kooda, J. C..................Morris
§ Lindberg, A. L...........Wheaton
§†Linde, Herman...............Cyrus
McIver, Bert A.............Lowry
§ Magnuson, A. E...........Wheaton
§ Merrill, R. W................Morris
Muir, W. F.........Browns Valley
§ O'Donnell, D. M........Ortonville
§ Oliver, I. L..............Graceville
§ Plasha, M. K.............Glenwood
† Ransom, M. L............Hancock
§ Rossberg, R. A.............Morris
‡§Salk, R. J.............Sauk Rapids
§ Swedenburg, P. A........Glenwood
Wagner, N. W...........Graceville

WINONA COUNTY MEDICAL SOCIETY

Regular meeting, first Monday in January, April, July and October
Annual meeting in January
Number of Members—28

President
Schmidt, Hilmar R..........Winona
Secretary
Finkelnburg, W. O.........Winona
† Benoit, F. T.................Winona
§ Boardman, D. V...........Winona
§ Christensen, E. E..........Winona
§ Finkelnburg, W. O.........Winona
§ Hartwich, R. F.............Winona
§ Heise, Carl v R............Winona
§ Heise, Paul.................Winona
§†Heise, W. F. C............Winona
§ Heise, W. v R.............Winona
§ Johnston, L. F.............Winona
§ Keyes, J. D................Winona
§ Loomis, G. L..............Winona
§ Mattison, P. A.............Winona
§ Meinert, A. E..............Winona
Neumann, C. A...........Lewiston
§ Page, R. L..............St. Charles
§†Robbins, C. P..............Winona
§ Roemer, H. J..............Winona
§ Rogers, C. W...............Winona
Rollins, Pat.............St. Charles
§ Satterlee, H. W............Lewiston
§ Schmidt, H. R..............Winona
§ Steiner, I. W...............Winona
*§†Tweedy, G. J...............Winona
§ Tweedy, J. A...............Winona
§ Vollmer, F. J...............Winona
§ Wilson, R. H...............Winona
§ Woltjen, M. J............Rushford
§ Younger, L. I...............Winona

WRIGHT COUNTY MEDICAL SOCIETY

Regular meetings every three months
Annual meeting, October
Number of Members—15

President
Sandeen, R. M...............Buffalo
Secretary
Catlin, T. J..................Buffalo
§ Anderson, W. P.............Buffialo
§ Bendix, L. H.............Annandale
§†Catlin, J. J..................Buffalo
§ Catlin, T. J..................Buffalo
§ Ellison, F. E............Monticello
§ Greenfield, W. T............Cokato
Grundset, O. J............Montrose
§ Guilfoile, P. F...............Delano
Hagen, Kristofer............Cokato
Hall, W. E............Maple Lake
§ Hart, W. E..............Monticello
Larson, Loren J.........Minneapolis
*§†Ridgway, A. M.........Annandale
§ Smorszczok, M..........Monticello
§ Thielen, R. D........Saint Michael
§ Thomas, William H....Howard Lake

Alphabetic Roster

Key to Symbols: *Deceased; †Affiliate or Life Member; ‡In Service.

	Aanes, A. M.	Red Wing
†	Aborn, W. H.	Hawley
	Abraham, A. L.	Duluth
	Abramson, Milton	Minneapolis
	Achor, R. W. P.	Rochester
	Adair, A. F., Jr.	St. Paul
	Adams, B. S.	Hibbing
	Adams, R. C.	Rochester
	Addy, E. R.	Gilbert
	Adkins, C. D.	Minneapolis
†	Adkins, C. M.	Thief River Falls
	Adkins, G. H.	Sandstone
	Affeldt, D. E.	Kasson
	Aga, John	Rochester
	Ager, E. A.	Duluth
	Agustsson, Hreidar	Minneapolis
	Ahern, E. E.	Minneapolis
	Aherns, A. E.	St. Paul
	Ahlfs, J. J.	Caledonia
†	Ahrens, Albert E.	St. Paul
*	Ahrens, A. H.	Sandstone
	Ahrens, C. F.	Duluth
	Ahrens, H. G.	Worthington
	Ahrens, R. M.	St. Paul
†	Aitkens, H. B.	LeCenter
	Akins, W. M.	Red Wing
	Albrecht, H. H.	Chisago City
	Alcorn, Wm. J.	Wabasso
†	Alden, J. F., Jr.	St. Paul
	Alexander, H. A.	Minneapolis
	Aling, C. A.	Minneapolis
	Allen, E. V. N.	Rochester
	Allen, John H.	Montevideo
	Allen, Raymond A.	Rochester
	Allison, D. D.	Litchfield
	Altnow, H. O.	Minneapolis
†	Amberg, Samuel	Rochester
	Andersen, H. A.	Rochester
	Andersen, S. C.	Minneapolis
	Anderson, A. S.	St. Louis Park
	Anderson, Chester A.	Hector
	Anderson, Chester A.	Madison, Wis.
‡	Anderson, D. C.	Lamberton
*	Anderson, D. D.	Minneapolis
	Anderson, D. M.	Minneapolis
	Anderson, D. P.	Austin
†	Anderson, E. D.	Minneapolis
	Anderson, E. M.	St. Cloud
	Anderson, E. R.	Minneapolis
‡	Anderson, Frank J.	Ft. Leavenworth, Kans.
	Anderson, F. C.	Owatonna
	Anderson, H. J.	Austin
	Anderson, J. J.	Mankato
	Anderson, K. W.	Minneapolis
‡	Anderson Milton	Rochester
	Anderson, M. J.	Rochester
	Anderson, Margaret	Mankato
	Anderson, Richard W.	St. Paul
	Anderson, Roger L.	Detroit Lakes
	Anderson, U. S.	Minneapolis
	Anderson, W. E.	Clearbrook
	Anderson, W. P.	Buffalo
	Anderson, Wallace R.	Austin
	Anderson, W. W.	Brainerd
	Anderson, Wm. H.	Minneapolis
	Anderson, Wm. T.	Minneapolis
	Andreassen, E. C.	St. Paul
†	Andrejek, A. R.	Minneapolis
	Andresen, K. D'A.	Minneapolis
	Andrews, B. F.	Holdingford
	Andrews, R. S.	Minneapolis
	Andrews, R. N.	Mankato
	Ankner, F. J.	Minneapolis
	Archer, Willard E.	Anoka
†	Ardan, Nicholas, Jr.	Rochester
	Arends, A. L.	Minneapolis
	Arey. S. L.	Minneapolis
†	Arhelger, Stuart	Minneapolis
	Arko, J. L.	Hibbing
	Arlander, C. E.	Minneapolis
	Arling, L. S.	Minneapolis
	Armstrong, R. S.	Winnebago
	Armstrong, Wilbur A.	Rochester
	Arndt, H. Wm.	Detroit Lakes
	Arnesen, J. F.	Owatonna
	Arnson, A. I.	Morris
	Arnold, Anna W.	Minneapolis
	Arnold, E. Wm.	Adrian
	Arnquist, A. S.	St. Paul
	Arny, F. P.	St. Paul
	Arvidson, Carl G.	Minneapolis
	Arzt, P. K.	Saint Paul
	Athens, A. G.	Duluth
‡	Atmore, Wm.	Brooklyn
†	Aune, Martin	Minneapolis
†	Aurand, Wm. H.	Minneapolis
	Aurelius, J. R.	Saint Paul
	Ausman, D. R.	Saint Paul
	Austrian, Sol	Cosmos

‡	Baars, C. W.	Camp Cook, California
	Babb, F. S.	Saint Paul
	Backus, R. W.	Nopeming
	Bacon, D. K.	Saint Paul
	Badeaux, George I.	Brainerd
	Bader, J. L.	Slayton
	Baer, Walter	Saint Paul
‡	Bagby, G. W.	Ft. Leonard Wood, Mo.
	Baggenstoss, A. H.	Rochester
	Baggenstoss, O. J.	Minneapolis
	Bagley, C. M.	Duluth
	Bagley, Elizabeth C.	Duluth
	Bagley, Wm. R.	Duluth
	Bahn, R. C.	Rochester
	Baich, V. M.	Bovey
‡	Bain, R. C.	San Francisco, Calif.
	Bair, Hugo L.	Rochester
	Baird, J. W.	Minneapolis
	Baird, Raymond I.	Lake Crystal
	Baken, M. P.	Minneapolis
	Baker, A. B.	Minneapolis
	Baker, A. T.	Minneapolis
	Baker, G. S.	Rochester
	Baker, H. L., Jr.	Rochester
	Baker, H. R.	Hayfield
	Baker, Jeanette L.	Fergus Falls
†	Baker, Looe	Minneapolis
	Baker, M. E.	Minneapolis
	Baker, N. H.	Fergus Falls
	Baker, P. L.	Rochester
	Baker, R. L.	Madison, Wis.
	Bakkila, H. E.	Duluth
	Balcome, M. M.	Saint Paul
†	Balfour, D. C.	Rochester
	Balfour, Wm. M.	Rochester
	Balkin, S. G.	Minneapolis
	Balmer, A. I.	Pipestone
‡	Bank, H. E.	Portland, Oregon
	Banner, E. A.	Rochester
	Barber, Tracy E.	Austin
	Bardon, Richard	Duluth
	Bargen, J. A.	Rochester
	Barker, J. D.	Duluth
	Barker, N. W.	Rochester
	Barnett, G. L.	Graceville
	Barnett, J. M.	Saint Paul
	Barney, L. A.	Duluth
‡	Barno, Alex	St. Louis Park
	Baronofsky, I. D.	Minneapolis
	Barr, L. C.	Albert Lea
	Barr, M. M.	Minneapolis
	Barr, Ronald	Montevideo
	Barr, R. N.	Minneapolis
	Barrett, E. E.	Duluth
	Barrett, J. W.	Rochester
	Barron, J. J.	Minneapolis
	Barron, Moses	Minneapolis
	Barron, S. S.	Minneapolis
	Barry, L. W.	Saint Paul
†	Barsness, Nellie O. N.	Saint Paul
	Bartholomew, L. G.	Rochester
	Basinger, H. R.	Mountain Lake
	Basinger, Homer P.	Windom
	Bastron, J. A.	Rochester
	Batdorf. B. N.	Good Thunder
	Bauer, E. L.	Saint Paul
	Baumgartner. F. H.	Albany
†	Baxter, S. H.	Minneapolis
	Bayley. E. C.	Lake City
	Bayard, E. D.	Rochester
	Beach, Northrup	Minneapolis
	Beahrs, O. H.	Rochester
†	Beals. Hugh	Saint Paul
*†	Beard, A. H.	Deephaven
	Beard, E. F.	Rochester
	Beaton, T. Gordon	Northfield
†	Becker, A. M.	Minneapolis
	Becker, F. T.	Duluth
‡	Becker, S. Wm., Jr.	Chicago
	Beckering. Gerrit	Edgerton
	Bedford. E. Wm.	Minneapolis
	Beech, R. H.	Saint Paul
	Beek, Harvey O.	Saint Paul
	Beer, J. J.	Saint Paul
‡	Behling, F. L.	Barston, Calif.
	Behmler, F. W.	Morris
	Behr, O. K.	Crookston
	Beirstein, Samuel	Minneapolis
	Beise, R. A.	Brainerd
	Beiswanger, R. H.	Minneapolis
	Bell, C. C.	Saint Paul
†	Bell, E. T.	Minneapolis
‡	Bellomo, James	New York, N.Y.
	Bellville, T. P.	Minneapolis
	Belzer, M. S.	Minneapolis
	Bender, J. H.	Brainerd
‡	Bender, L. F.	San Diego, Calif.
	Bendix, L. H.	Annandale
	Benedict, Wm. L.	Rochester
	Benell, O. E.	Virginia
	Benepe, J. L.	St. Paul
	Benesh, L. A.	Minneapolis
†	Benjamin, A. E.	Minneapolis
	Benjamin, E. G.	Minneapolis
	Benjamin, H. G.	Minneapolis
	Benjamin, W. G.	Pipestone
	Bennett, Warren A.	Rochester
†	Bennion, P. H.	Isway, Mont.
	Benoit, Clair	Rochester
†	Benoit, F. T.	Winona
	Benson, A. H.	Little Falls
	Benson, E. S.	Minneapolis
	Benson, L. M.	Tracy
	Bentley, N. P.	Saint Paul
	Benua, Richard S.	Rochester
	Bepko, Marie K.	Cloquet
	Berdez, G. L.	Duluth
	Berens, James	Rochester
	Bergan, Otto	Clinton
	Bergan, R. O.	Duluth
	Berge, D. O.	Roseau
	Berge, H. L.	Mora
†	Berge, Henry B.	Rochester
†	Berge, Kenneth	Rochester
	Berger, A. G.	Minneapolis
	Bergh, G. S.	Minneapolis
	Bergh, S. M.	Minneapolis
	Bergman, O. B.	Saint James
	Berquist, K. E.	Battle Lake
†	Berkman, David	Oronoco
	Berkman, J. M.	Rochester
	Berkwitz, N. J.	Minneapolis
	Berlin, A. S.	Hallock
	Berman, Reuben	Minneapolis
‡	Bernatz, P. E.	Decorah, Iowa
	Bernier, M. J.	North Saint Paul
	Bernstein, Irving C.	Minneapolis
	Bernstein, Wm. C.	Saint Paul
	Bessesen, A. N., Jr.	Minneapolis
	Bessesen, D. H.	Buffalo Lake
†	Bessesen, Wm. A.	Minneapolis
	Beuning, J. B.	Saint Cloud
	Beyer, Eugene	Braham
	Bianco, A. J.	Duluth
†	Bianco, Anthony J., Jr.	Duluth
	Bicek, J. F.	Saint Paul
	Bickel, Wm. H.	Rochester
†	Biedermann, Jacob	Thief River Falls
	Bieter, R. N.	Minneapolis
†	Bigelow, C. E.	Dodge Center
	Bigler, Earl E.	Perham
	Bigler, Ivane	Perham
	Bilka, P. J.	Minneapolis
	Binder, M. R.	Minneapolis
†	Binet, H. E.	Grand Rapids
†	Binger, H. E.	Phoenix, Ariz.
	Black, B. M.	Rochester
	Black, E. J.	Saint Paul
	Black, Wm. A.	New Ulm
	Blackmore, S. C.	Biwabik
	Blake, A. J.	Hopkins
	Blake, J. A.	Hopkins
	Blake, P. S.	Hopkins
†	Blakey, A. R.	Osakis
	Block, M. A.	Rochester
	Bloedel, T. J. G.	Osseo
	Blomberg, Wm. R.	Princeton
	Bloom, Joseph	Duluth
	Bloom, N. B.	Minneapolis
	Blumberg, H. B.	Fairmont
	Blumenthal, J. S.	Minneapolis
	Boardman, D. V.	Winona
†	Bock, R. A.	Saint Paul
	Bodaski, Albert A.	Tyler
‡	Bodelson, A. H.	Pensacola, Fla.

†	Boeckmann, Egil	Saint Paul
	Boehrer, J. J., Jr.	Minneapolis
	Bofenkamp, Benj.	Minneapolis
	Bofenkamp, F. Wm.	Luverne
	Bohn, D. G.	Minneapolis
	Boies, L. R.	Minneapolis
	Bolender, H. L.	Saint Paul
†	Bolin, Robert C.	Saint Paul
	Boline, C. A.	Battle Lake
†	Bolsta, Chas.	Ortonville
	Bolstad, Owen C.	Duluth
	Bolz, J. A.	Grand Rapids
	Boman, P. G.	Duluth
	Boody, G. J., Jr.	Dawson
	Boone, E. S.	Luverne
†	Booth, A. E.	Minneapolis
†	Boothby, W. M.	Albuquerque, N. M.
	Borden, C. W.	Minneapolis
	Borg, J. F.	Saint Paul
	Borgerson, A. H.	Long Prairie
	Borgeson, E. J.	Minneapolis
	Borman, C. N.	Minneapolis
	Borowicz, Leonard A.	Minneapolis
	Bosland, H. G.	Willmar
	Bossert, C. S.	Mora
	Bostwick, J. L.	Montgomery, Ala.
‡	Boswell, J. T.	Portsmouth, N. J.
	Bottolfson, B. T.	Moorhead
†	Bouma, L. R.	Saint Paul
	Bouquet, B. J.	Wabasha
	Bowen, R. L.	Hibbing
	Bowers, G. G.	Minneapolis
	Bowers, R. N.	Lake City
†	Bowes, Donald E.	Rochester
†	Bowes, Earl	Rochester
	Boyd, D. A. Jr.	Rochester
	Boyd, L. M.	Alexandria
	Boyer, G. S.	Crookston
	Boyer, Saml. H.	Duluth
	Boyer, Saml. H., Jr.	Duluth
	Boynton, Ruth E.	Minneapolis
	Boysen, Herbert	Madelia
†	Boysen, Peter	Bemidji
	Braasch, J. W.	Rochester
†	Braasch, Wm. F.	Rochester
	Brabec, P. F.	Bagley
	Bradley, N. J.	Willmar
	Brady, Joan V.	Rochester
	Brand, Geo. D.	Saint Paul
†	Brand, Wm. A.	Redwood Falls
†	Brandenburg, John T.	Rochester
	Brandenburg, R. O.	Rochester
	Branham, D. S.	Saint Peter
	Bratholdt, James	Watertown
	Bratrud, A. F.	Minneapolis
†	Bratrud, Edward	Thief River Falls
	Bratrud, Theo. E.	Thief River Falls
	Bratrude, E. J.	Saint James
	Braun, O. C.	Grand Rapids
	Braun, Robert A.	Rochester
	Bray, E. R.	Saint Paul
	Bray, P. N.	Duluth
	Bregel, F. L.	Saint James
†	Breitenbucher, R. B.	Minneapolis
	Brekke, Harvey J.	Minneapolis
	Brickley, P. M.	Rochester
	Bridge, E. V.	Cannon Falls
	Briggs, J. F.	Saint Paul
†	Brigham, C. F.	Saint Cloud
	Brigham, C. F., Jr.	Saint Cloud
	Brill, Alice K.	Minneapolis
	Brindley, C. O.	Rochester
	Brink, A. A.	Baudette
	Brink, D. M.	Hutchinson
	Brink, Wm. R.	Rochester
	Broadbent, J. C.	Rochester
	Broadie, T. E.	Saint Paul
	Brodie, W. D.	Saint Paul
†	Broker, H. M.	Minneapolis
‡	Brooker, W. J.	New York, N. Y.
	Brooks, Charles N.	Minneapolis
	Brown, Alexander	Rochester
†	Brown, A. H.	Pipestone
†	Brown, E. D.	Paynesville
	Brown, H. A.	Rochester
‡	Brown, H. M.	Walker
†	Brown, J. C.	Los Gatos, Cal.
	Brown, J. R.	Rochester
	Brown, Philip W.	Rochester
	Brown, Wm. D.	Minneapolis
	Bruhl, H. H.	Faribault
	Brunsting, L. A.	Rochester
	Brusegard, J. F.	Red Wing
	Brzica, S. M.	Worthington
	Bucher, F. D.	Starbuck
	Buchstein, H. F.	Minneapolis
	Buck, F. H.	Shakopee
	Buckley, R. P.	Duluth
	Buesgens, R. H.	Waterville
	Buie, L. A.	Rochester
	Buirge, R. E.	Minneapolis
	Bulinski, T. J.	Saint Paul
	Bulkley, Kenneth	Minneapolis
	Bunker, B. W.	Anoka
	Burch, E. P., II	Saint Paul
†	Burch, F. E.	Two Harbors
	Burchell, H. B.	Rochester
	Burgert, E. O., Jr.	Rochester
	Burke, E. C.	Rochester
	Burklund, E. C.	Saint Paul
	Burlingame, D. A.	Saint Paul
	Burmeister, Richard	Saint Paul
	Burnett, Clem F., Jr.	Crookston
	Burnham, W. H.	Minneapolis
	Burns, Catherine	Albert Lea
	Burns, F. M.	Milan
	Burns, M. A.	Milan
	Burns, R. M.	Saint Paul
	Burseth, E. C.	Mora
	Burton, C. G.	Saint Paul
‡	Buscher, J. C.	Saint Cloud
	Bush, R. P.	Saint Paul
	Bushard, W. J.	Minneapolis
	Busher, H. H.	Saint Paul
	Butler, J. K.	Cloquet
	Butt, Hugh R.	Rochester
	Butturff, C. R.	Freeborn
	Butzer, J. A.	Mankato
	Buzzelle, L. K.	Minneapolis

	Cable, M. L.	Minneapolis
	Cabot, C. M.	Minneapolis
	Cabot, V. S.	Minneapolis
	Cady, L. H.	Minneapolis
	Cain, C. L.	Saint Paul
	Cain, J. C.	Rochester
	Cain, J. H.	Hoffman
	Cairns, R. J.	Redwood Falls
†	Calhoun, F. W.	Albert Lea
	Callahan, F. F.	Saint Paul
	Cameron, Isabel L.	Minneapolis
	Cameron, J. H.	Crookston
	Campbell, D. C.	Rochester
	Campbell, L. M.	Minneapolis
	Campbell, O. J.	Minneapolis
	Cantwell, Wm. F.	International Falls
	Caplan, Leslie	Minneapolis
‡	Card, Wm. H.	Great Lakes, Ill.
	Cardle, G. E.	Brainerd
	Carey, J. B.	Minneapolis
	Carey, J. M.	Rochester
	Carlander, L. W., Jr.	Minneapolis
	Carley, W. A.	Saint Paul
	Carlson, C. E.	Alexandria
	Carlson, J. V.	Westbrook
	Carlson, Lawrence	Minneapolis
	Carlson, L. T.	Minneapolis
	Carlson, N. C.	Newport Beach, Calif.
	Carlson, R. E.	Stillwater
	Carlson, Vernon J.	Fargo
	Caron, R. P.	Minneapolis
	Carr, David T.	Rochester
	Carroll, Wm. C.	Saint Paul
	Carryer, H. M.	Rochester
	Caspers, C. G.	Minneapolis
†	Catlin, J. J.	Buffalo
	Catlin, T. J.	Buffalo
	Cavanor, F. T.	Minneapolis
	Cedarleaf, C. B.	Saint Paul
	Ceder, E. T.	Minneapolis
	Cerbenka, C. F.	New Prague
	Cesnik, R. J.	Saint Cloud
	Chadbourn, C. R.	Saint Paul
†	Chadbourn, W. A.	Minneapolis
	Chalgren, Wm. S.	Mankato
	Challman, S. A.	Minneapolis
	Chambers, W. C.	Blue Earth
	Chance, D. P.	Rochester
	Chapman, C. B.	Minneapolis
	Chapman, T. L.	Duluth
	Chatterton, C. C.	Saint Paul
	Chavez, D. A.	Minneapolis
	Chermak, F. G.	International Falls
	Chesley, A. J.	Saint Paul
	Chesler, M. D.	Minneapolis
†	Chiles, N. H.	Rochester
	Childs, D. S., Jr.	Rochester
	Chisholm, T. C.	Minneapolis
	Christensen, C. H.	Duluth
	Christensen, E. E.	Winona
	Christensen, L. E.	Minneapolis
‡	Christensen, Mentor	Mississippi
	Christensen, N. A.	Rochester
	Christiansen, Andrew	Saint Paul
	Christiansen, H. A.	Jackson
	Christianson, H. W.	Minneapolis
	Christoferson, Lee	Fargo, N. D.
	Chunn, S. S.	Pipestone
	Clagett, O. T.	Rochester
	Clark, C. L.	Duluth
	Clark, Edward C.	Rochester
	Clark, Elizabeth A.	Duluth
	Clark, H. B.	Saint Cloud
	Clark, H. B., Jr.	Minneapolis
	Clark, J. T.	Duluth
	Clark, L. Wm.	Spring Valley
	Clark, P. L., III	Rochester
	Clarke, E. K.	Minneapolis
	Clay, L. B.	Minneapolis
	Claydon, H. F.	Red Wing
	Cleaves, Wm. D.	Sauk Centre
†	Clement, J. B.	Lester Prairie
	Clifford, G. W.	Alexandria
	Clifton, Theodore	Chatfield
	Closuit, F. C.	Aitkin
*	Clothier, E. F.	Elk River
	Cochrane, B. B.	Saint Paul
	Cochrane, R. F.	Minneapolis
	Coddon, W. D.	Saint Paul
	Coe, John I.	Minneapolis
	Cofer, Vernon	Rochester
	Cohen, B. A.	Minneapolis
	Cohen, E. B.	Minneapolis
	Cohen, Ellis N.	Saint Paul
	Cohen, M. M.	Saint Paul
	Cohen, S. S.	Oak Terrace
	Colby, M. Y., Jr.	Rochester
	Colby, W. L.	Saint Paul
	Cole, W. H.	Saint Paul
	Coleman, J. B.	Saint Paul
	Coll, J. J.	Duluth
†	Collie, H. G.	St. Petersburg, Fla.
†	Collins, A. N.	Moose Lake
	Collins, J. S.	Wabasha
	Combacker, L. C.	Fergus Falls
	Comfort, M. W.	Rochester
	Condit, Wm. H.	Minneapolis
	Conley, F. W.	Duluth
	Conley, R. H.	Mankato
	Connolly, C. J.	Saint Paul
	Connor, C. E.	Saint Paul
	Cook, C. K.	Saint Paul
	Cook, J. M.	Staples
‡	Cooley, J. C.	Wyoming
	Coombs, C. H.	Cass Lake
	Cooney, J. F.	Rochester
	Cooper, C. C.	Saint Paul
	Cooper, J. P.	Excelsior
	Cooper, M. D.	Winnebago
	Cooper, Robt. R.	Minneapolis
	Cooper, Talbert	Rochester
	Cope, H. B.	Virginia
	Corbin, K. B.	Rochester
	Corniea, A. D.	Minneapolis
	Correa, D. H.	Minneapolis
†	Corrigan, J. E.	Spooner
	Cosgriff, J. A.	**Olivia**
	Cosgriff, J. A., Jr.	Olivia
	Costello, Addis	Rochester
	Coulter, H. E.	Madelia
	Counseller, Virgil	Rochester
	Countryman, R. S.	Saint Paul
	Courtin, R. F.	Worcester, Mass.
	Covell, W. W.	Saint Peter
	Coventry, M. B.	Rochester
†	Coventry, Wm. A.	Duluth
	Coventry, Wm. D.	Duluth
	Covey, K. W.	Mahnomen
	Cowan, D. W.	Minneapolis
	Cowley, H. S.	Kansas City
	Craig, C. C.	International Falls
	Craig, D. M.	Saint Paul
	Craig, M. Elizabeth	Minneapolis
	Craig, W. McK.	Rochester
	Cranmer, R. R.	Minneapolis
	Cranston, R. W.	Minneapolis
	Creevy, C. D.	Minneapolis
	Creighton, R. H.	Minneapolis
†	Crenshaw, J. L.	Sanford, Fla.
	Critchfield, L. R.	Saint Paul
	Cronwell, B. J.	Austin
	Crow, E. R.	Hot Springs, S. D.
	Crowley, J. H.	Saint Paul
‡	Crudo, V. D.	Saint Paul
	Crump, J. W.	Saint Paul
†	Crumbley, J. J.	Rochester
	Crumpacker, E. L.	Roanoke, Va.
	Culligan, J. M.	Saint Paul
	Culligan, L. C.	Minneapolis
	Culp, O. S.	Rochester
	Culver, L. G.	Saint Paul
	Cundy, D. T.	Minneapolis
	Curtiss, R. K.	Los Angeles
	Cushing, R. L.	Brainerd
†	Cutts, George	Minneapolis

	Dady, E. E.	Minneapolis
	Daehlin, Rolf	Fergus Falls
	Dahl, E. O.	Minneapolis
†	Dahl, G. A.	Mankato
	Dahl, James C.	Minneapolis
	Dahl, J. A.	Minneapolis
	Dahle, M. B.	Olivia
	Dahlin, D. C.	Rochester
	Dahlstet, J. P.	Mankato
†	Daignault, Oscar	Benson
	Dale, L. N.	Red Lake Falls
	Daniel, D. H.	Minneapolis
	Danielson, Lennox	Litchfield
	Dargay, C. P.	Minneapolis
	Daugherty, G. W.	Rochester
	Davis, A. C.	Rochester
	Davis, Edw. V.	Saint Paul
	Davis, Geo. D.	Rochester

† Davis, Harry L. .... Rochester
Davis J. C. .... Minneapolis
Davis, L. T. .... Wadena
Davis, L. F. .... Wadena
‡ Davis, N. B. .... Rochester
Davis, R. D. .... Waseca
‡ Davis, R. E. .... Geneva, N. Y.
Davis, T. L. .... Wadena
Davis, Wm. I. .... Mound
Dawson, J. R. .... Saint Paul
Dearing, Wm. H., Jr. .... Rochester
† DeBoer, Hermanus .... Edgerton
Decker, C. H. .... Saint Paul
DeKruif, H. .... Fergus Falls
Delmore, J. L. .... Roseau
Delmore, J. L., Jr. .... Roseau
Delmore, R. J. .... Roseau
Del Plaine, C. W. .... Minneapolis
Demo, R. A. .... Albert Lea
Denman, A. V. .... Mankato
Denton, C. .... Rochester
Derauf, B. I. .... Saint Paul
Deters, D. C. .... Saint Paul
Detjen, E. D. .... Big Fork
Deveraux, T. J. .... Wayzata
Devine, K. D. .... Rochester
DeWeerd, J. H. .... Rochester
Deweese, W. J. .... Bemidji
Dewey, D. H. .... Owatonna
Dickman, Roy W. .... Minneapolis
Dickson, F. H., Jr. .... Proctor
Dickson, T. H. .... Saint Paul
Diehl, H. S. .... Minneapolis
Diessner, A. W. .... Redwood Falls
Diessner, G. R. .... Rochester
Diessner, H. D. .... Minneapolis
‡ Dillard P. G., Jr. ....
Camp Carson, Colo.
Dille, D. E. .... Litchfield
Dittrich, R. J. .... Duluth
Dixon, Claude F. .... Rochester
‡ Doane, J. C. .... Rochester
Dobson, Ross A. .... Rochester
Dockerty, M. B. .... Rochester
Dodds, Wm. C. .... Detroit Lakes
Dodge, Henry W., Jr. .... Rochester
Doerr, John C. .... Rochester
‡ Doherty, E. M. .... New Prague
Doman, V. Wm. .... Lakefield
Doms, Vernon A. .... Elbow Lake
Donaldson, C. S. .... Saint Cloud
Donatelle, E. P. .... Minneapolis
† Donin, J. F. .... Rochester
Donoghue, F. E. .... Rochester
Donohue, P. F. .... Saint Paul
Donovan, D. L. .... Albert Lea
Dordal, John .... Sacred Heart
Dorge, R. I. .... Minneapolis
Dornberger, G. R. ....
Ft. Lauderdale, Fla.
Dornblaser, H. B. .... Minneapolis
Dorsey, G. C. .... Minneapolis
Douglass, B. E. .... Rochester
‡ Dovenmuehle, R. H. .... El Paso, Tex.
Doxey, G. L. .... Minneapolis
Doyle, G. C. .... Duluth
Doyle, James R. .... Rochester
Doyle, L. O. .... Minneapolis
Drake, C. B. .... Saint Paul
Drake, C. R. .... Minneapolis
† Dredge, H. P. .... Sandstone
‡ Dredge, T. E. .... Minneapolis
Drexler, Geo. W. .... Blue Earth
Drill, Herman E. .... Hopkins
† Drips Della G. .... Rochester
Dry, Thos. J. .... Rochester
Dubbe, F H. .... New Ulm
DuBois, J. F. .... Sauk Centre
DuBois J F., Jr. .... Sauk Centre
Duff, E. R. .... Minneapolis
Duncan, D. K. .... Rochester
Duncan, J. W. .... Moorhead
† Dungay, N. S. .... Northfield
Dunlap, E. H. .... Minneapolis
Dunlap, R. W. .... Rochester
† Dunn, Jack, Jr. .... Rochester
Dunn, James N. .... Saint Paul
Dupont, J. A .... Excelsior
Duryea, W. M. .... Minneapolis
DuShane, James W. .... Rochester
Dutton, C. E. .... Minneapolis
Dvorak B. A. .... Minneapolis
Dwan P. F. .... Minneapolis
Dworsky, S. D. .... Minneapolis
Dwyee, John T. .... Duluth
† Dykstra, P. C. .... Rochester
Dysterheft, A. F. .... Gaylord

Earl, Geo. A. .... Saint Paul
Earl, John R. .... Saint Paul
Eaton, L. M. .... Rochester
Eberly, T. S. .... Benson
† Eberlin, Edw. A. .... Glenwood
Eckdale, J. E. .... Marshall
Eckman, P. F. .... Duluth
Eckman, R. J. .... Duluth
Edlund, Gustaf .... Saint Paul
Edwards, J. E. .... Rochester
Edwards, J. W. .... Saint Paul
Edwards, L. G. .... Saint Paul
Edwards, T. J. .... Saint Paul
Egge, S. G. .... Albert Lea
Eginton, C. T. .... Saint Paul
Ehrenberg, C. J. .... Minneapolis
Ehrlich, S. P. .... Minneapolis
Eich, M. A. .... Minneapolis
Eichhorn, E. P. .... Minneapolis
Eide, O. A. .... Hancock
Eiler, John .... Park Rapids
Eisenstadt, D. H .... Minneapolis
Eisenstadt, Wm. S. .... Minneapolis
Eitel, Geo. D. .... Minneapolis
† Ekbladt, J. W. .... Duluth
Eklund, C. D. .... Duluth
Ekstrand, L. M. .... Wabasha
Elias, Frank J. .... Duluth
Elkins, Earl C. .... Rochester
Ellertson, L. M. .... Albert Lea
Ellinger, A. J. .... Willmar
Ellis, Earl Wm. .... Elgin
Ellis, F. H. .... Rochester
Ellison, D. E. .... Minneapolis
Ellison, Ellis .... Minneapolis
Ellison, F. E. .... Monticello
Elsey, Edw. M. .... Glenwood
† Elsey, James R. .... Glenwood
Ely, O. S. .... Saint Paul
Emanuel, K. Wm. .... Duluth
Emerson, E. C. .... Saint Paul
Emerson, E. E. .... Osakis
Emmett, John H. .... Rochester
Emmons, R. W. .... Saint Paul
Emond, A. J. .... Farmington
Emond, J. S. .... Farmington
Endress, E. K. .... Saint Paul
Engberg, E. J. .... Faribault
Engelhart, P. C. .... Minneapolis
Englund, E. F. .... Minneapolis
Engstrand, O. J. .... Minneapolis
Engstrom, G. F. .... Belgrade
Engstrom, Robert .... Mankato
Enroth, O. E. .... Saint Paul
Eppard, R. M. .... Cloquet
Epperson, D. P. .... Rochester
Erdal, O. A. .... Albert Lea
Erich, J. B. .... Rochester
Erickson, A. O. .... Long Prairie
Erickson, C. O. .... Minneapolis
Erickson, D. J. .... Rochester
Erickson, Eskil .... Halstad
Erickson, G. P. .... Hibbing
Erickson, L. F. .... Minneapolis
Erickson, Myron .... Minneapolis
Erickson, R. F. .... Minneapolis
Ericson, R. M. .... Wayzata
Ericson, Swan .... LeSueur
† Ernest, G. C. H. .. St. Petersburg, Fla.
Ersfeld, M. P. .... Saint Paul
Erskine, G. M. .... Grand Rapids
Ertel, E. J. .... Ellendale
† Eshelby, E. C. .... Saint Paul
Estes, J. E. .... Rochester
† Estrem, C. O. .... Fergus Falls
Estrem, R. D. .... Fergus Falls
Estrem, R. L. .... Fergus Falls
Estrem, T. A. .... Hibbing
† Eusterman, G. B. .... Rochester
Eustermann, J. J. .... Mankato
Evans, Eugene G., Jr. .... Rochester
Evans, E. T. .... Minneapolis
Evans, Leslie .... Sauk Rapids
† Evans, R. D. .... Minneapolis
† Evarts, A B. .... Rochester
Evensta, John B. .... Grand Rapids
Evert, J. A., Jr. .... Saint Paul

Faber, J. E. .... Rochester
† Fahey, Edw. W. .... Saint Paul
Fahr, George .... Minneapolis
Fansler, W. A. .... Minneapolis
Farkas, I. V. .... Saint Paul
† Farrish, R. C. .... Sherburn
Faulconer, Albert, Jr. .... Rochester
Faulkner, J. W. .... Rochester
Fawcett, A. M. .... Renville
Fawcett, K. R. .... Duluth
Fee, John G. .... Saint Paul
Feeney, J. M. .... Minneapolis
Feeney, Michael J. .... Minneapolis
Feferman, Martin E. .... Minneapolis
Feigal, D. W. .... Wayzata
Feigal, Wm. M. .... Thief River Falls
Feinberg, Philip .... Minneapolis
Feinstein, J. Y. .... Minneapolis
Felder, Davitt A. .... Saint Paul
Feldmann, Floyd .... New York, N. Y.
Felion, A. J. .... Saint Paul
Fellows, M. F. .... Duluth
Fenger, E. P. K. .... Oak Terrace
Fergeson, James .... Rochester
Ferguson, J. C. .... Saint Paul
Ferguson, Wm. C. .... Walnut Grove
Ferrell, C. R. .... Grand Rapids
Ferris, D. O. .... Rochester
Fesenmaier, O. B. .... New Ulm
Fesler, H. H. .... Saint Paul
Feuling, J. C. .... Duluth
Fidelman, N. E. .... Minneapolis
Field, A. H. .... Farmington
Figi, Frederick A. .... Rochester
Fingerman, D. L. .... Minneapolis
Fink, D. L. .... Saint Paul
Fink, Leo M. .... Minneapolis
Fink, W. H. .... Minneapolis
Finkelnburg, W. O. .... Winona
Fisch, H. M. .... Austin
Fischer, J. R. .... Blooming Prairie
Fischer, M. McC. .... Duluth
Fisher, D. W. .... Saint Paul
Fisher, Isadore I. .... Minneapolis
Fisketti, Henry .... Duluth
† Fitzgerald, D. F. .... Wayzata
† Fitzgerald, E. T. .... Rialto, Calif.
Fitzsimons, Wm. E. .... Brainerd
Fjelstad, C. A. .... Minneapolis
Flagg, G. B. .... Minneapolis
Flanagan, H. F. .... Saint Paul
Flanagan, L. G. .... Austin
Flancher, L. H. .... Crookston
Flannery, H. F. .... Saint Paul
Fleeson, Wm. H. .... Minneapolis
† Fleming, A. S. .... Clearwater, Fla.
Fleming, D. S. .... Hopkins
Fleming, T. N. .... Saint Cloud
Flesche, B. A. .... Lake City
Fliehr, R. R. .... Minneapolis
Flink, E. B. .... Minneapolis
‡ Flinn, J. B. .... Redwood Falls
‡ Floersch, A. J. .... Seattle, Wash.
Flom, M. G. .... Zumbrota
Flom, Robert S. .... Echo
Florine, Martin .... Janesville
Fly, O. A., Jr. .... Rochester
Flynn, B. F. .... Hibbing
Flynn, L. L., Jr. .... Saint Paul
† Fogarty, C. Wm. .... Saint Paul
Fogarty, C. Wm., Jr. .... Saint Paul
Fogelberg, E. J. .... Saint Paul
Foker, L. W. .... Minneapolis
Foley, F. E. B. .... Saint Paul
Folken, F. G. .... Albert Lea
Folsom, Louis B. .... Minneapolis
Ford, B. C. .... Marshall
Ford, Wm. H. .... Minneapolis
Forney, W. D. .... Rochester
Forsythe, J. R. .... Saint Paul
Fortier, G. M. A. .... Little Falls
Fosbender, Herman .... Hastings
Foss, E. L. .... Rochester
Foster, O. W. .... Minneapolis
Fowler, L. H. .... Minneapolis
Fox, J. R. .... Minneapolis
Franchere, F. Wm. .... Lake Crystal
Francis, D. W. .... Morristown
Frane, D. B. .... Minneapolis
Franklin, G. W. .... Northome
† Frear, Rosemary .... Minneapolis
Fredericks, Geo. M. .... Minneapolis
Frederickson, Alice C. .... Willmar
Fredricks, M. G. .... Duluth
Freedman, M. A. .... Rochester
Freedman, R. H. .... Rochester
Freeman, C. D. Jr. .... Saint Paul
Freeman, Craig .... Minneapolis
Freeman, D. W. .... Minneapolis
‡ Freeman, G. T. .... Saint Paul
Freeman, J. G. .... Fergus Falls
† Freeman, J. P. .... Glenville
Freidman, L. L. .... Saint Paul
Freligh, W. P. .... Albert Lea
French, L. A. .... Minneapolis
† Freymann, John G. .... Boston, Mass.
Frieberg, Jos. .... Minneapolis
Fricke, R. E. .... Rochester
Fried, L. A. .... Minneapolis
Friedell, Aaron .... Minneapolis
Friedell, George .... Ivanhoe
Friedman, H. S. .... Minneapolis
Friedman, Jack .... Minneapolis
Friend, C. A. .... Minneapolis
* Friesleben, Wm. .... Sauk Rapids
* Frisch, F. P. .... Willmar
Fritsche, Albert .... New Ulm
Fritsche, C. J. .... New Ulm
Fritsche, Theo. R. .... New Ulm
Fritz, W. L. .... Saint Paul
Froats, C. W. .... Saint Paul
† Frost, E. H. .... Willmar
Frost, J. B. .... Minneapolis
Frost, R. H. .... Oak Terrace
Frydenlund, C. B. .... Lyle
Frykman, H. M. .... Minneapolis

Fugina, Geo. R............Mankato
Fuller, Alice H.........Minneapolis
Fuller, B. F.............Saint Paul
Fuller, Josiah..............Duluth
Funk, V. K...........Oak Terrace
Furman, Lucie Christine.......
Minneapolis
Furnell, D. Q............Saint Paul
Futch, William D.........Rochester

Gaard, R. C............Minneapolis
Gaida, J. B.............Saint Cloud
*†Gaines, E. C..........Buffalo Lake
† Gallagher, B. J.............Waseca
‡ Gallagher, W. B.....Vienna, Austria
Gallet, L. E............Minneapolis
Galligan, John J.........Saint Paul
† Galligan, Margaret M...Minneapolis
Galloway, J. B.........Minneapolis
† Gambill, C. M............Rochester
Gammell, J. H..........Minneapolis
Garbrecht, A. Wm.......Saint Paul
Gardner, V. H............Fairmont
Gardner, W. P...........Saint Paul
Garlock, A. V..............Bemidji
Garlock, D. H..............Bemidji
‡ Garlock, G. L..............Bemidji
Garrett, Chas., Jr.........Rochester
Garrow, D. M...........Saint Paul
Garske, G. L............Minneapolis
Garten, J. L............Minneapolis
Gastineau, C. F...........Rochester
‡ Gatchell, Frank G..Montgomery, Ala.
‡ Gaunt, W. D.............Rochester
Gaviser, David..........Minneapolis
Gehlen, J. N............Saint Paul
Geib, Marvin J............Moorhead
Geiser, Peter M.........Alexandria
Geraci, J. E..............Rochester
Gericke, J. T., Jr.........Glenwood
Geurs, B. R...............Mankato
Ghent, C. H.............Saint Paul
Ghormley, R. K..........Rochester
Ghostlev, Mary C...........Bemidji
Gibb, R. P.......Bellingham, Wash.
Gibbs, E. C..............Saint Paul
Gibbs, R. W............Minneapolis
Giberson, R. G............Rochester
Gibenhain, J. N.........Minneapolis
Giere, J. C..............Minneapolis
Giere, R. W............Minneapolis
Giere, S. W..................Benson
Giesen, A. F..............Starbuck
† Giffin, H. Z...............Rochester
Gifford, R. W., Jr.........Rochester
Gilbert, M. G...........Minneapolis
Gilkey, S. E.............Saint Paul
Gillespie, D. R...........Saint Paul
Gillespie, M. G..............Duluth
† Gilley, E. Wayne.........Rochester
Gilman, L. C...............Willmar
† Gilmore, Rowland.........Crookston
Gingold, B. A...........Minneapolis
† Ginsberg, James P.......Rochester
Ginsberg, R. L............Rochester
† Giroux, A. A..............Mankato
Girvin, R. B............Minneapolis
Gierde, Wm. P...........Lake City
Glabe, R. A...............Plainview
† Glaeser, John H.........Minneapolis
Gleason, W. A...........Saint Paul
Goblirsch, A. P.........Sleepy Eye
Goehrs, G. H...........Saint Cloud
† Goehrs, H. Wm.........Saint Cloud
Goldberg, I. M..........Minneapolis
Goldish, D. R.................Duluth
Goldman, T. I..........Minneapolis
Goldner, M. Z..........Minneapolis
Goldsmith, J. W..........Saint Paul
Goldstein, N. P...........Rochester
† Goltz, E. V..............Saint Paul
‡ Goltz, N. F..............Saint Paul
Goltz, Robert..........Minneapolis
Good, C. A., Jr...........Rochester
Good, H. D.............Minneapolis
Goodlad, J. H............Rochester
Goodman, Chas.............Virginia
Gordon, P. E...........Minneapolis
Gordon, S. S.........St. Louis Park
Goss, H. C................Glencoe
Goss, Martha D............Glencoe
Gowan, L. R................Duluth
† Graham, A. W.............Chisholm
‡ Graham, G. G............San Diego
Grahek, J. P.....................Ely
‡ Grais, M. L.............Minneapolis
Grant, H. W.............Saint Paul
Grant, J. C.............Sauk Centre
Grant, Suzanne.........Minneapolis
Gratzek, F. R. E........Minneapolis
Gratzek, Thos...........Saint Paul
Grau, R. K..............Saint Paul

Graves, R. B.............Red Wing
† Gray, F. D................Marshall
Gray, H. K...............Rochester
Gray, R. C.............Minneapolis
Green, R. A............Minneapolis
† Green, Robert C., Jr......Rochester
Green, Wilson, Jr.........Rochester
Greenberg, A. J.........Minneapolis
Greene, D. E......Thief River Falls
Greene, L. F..............Rochester
Greenfield, Irving.......Minneapolis
Greenfield, Wm. T...........Cokato
† Greishiemer, E. M..Philadelphia, Pa.
Gridley, John W.........Saint Peter
Griebe, G. L..............Brownton
‡ Griffin, G. D., Jr.........Rochester
Griffin, John W., Jr........Bemidji
Griffin, R. P.................Benson
Grimes, B. P............Saint Peter
Grimes, Marian.........Minneapolis
Grindlay, J. H............Rochester
Grinley, A. V.........Grand Rapids
Grise, Wm. B...............Austin
Gronvall, P. R.........Minneapolis
Groschupf, Theo. P.........Bemidji
Grose, F. N................Clarissa
Gross, J. B...............Rochester
Grotting, J. K..........Minneapolis
† Gruenhagen, A. P........Saint Paul
Grundset, O. J...........Montrose
Guilbert, G. D.....Waukesha, Wis.
Guilfoile, P. J................Delano
Gulley, J. L..............Rochester
‡ Gullickson, Glenn, Jr....Minneapolis
† Gullixson, Andrew...Longmont, Colo.
Gully, R. J................Cambridge
Gunlaugson, F. G.......Minneapolis
Gushurst, E. G..........Minneapolis
Gustafson, M. B..........Rochester
Gustason, H. T.........Minneapolis
Guy, Jack A...........New London
† Gwinn, John L............Rochester

Haavik, J. E................Duluth
Habein, H. C.............Rochester
Habein, Harold, Jr........Rochester
Haberer, Helen R.......Minneapolis
Haes, Julius E.............Mankato
Hagedorn, A. B...........Rochester
Hagen, Kristofer.............Cokato
Hagen, O. J..............Moorhead
‡ Hagen, P. S.............Saint Paul
Hagen, W. S...........Minneapolis
† Haggard, G. D..........Minneapolis
Haigler, Frank H. Jr......Rochester
† Haines, J. H..............Stillwater
Haines, S. F..............Rochester
‡ Halbert, J. J.................Duluth
Halenbeck, P. L........Saint Cloud
Hall, Barnard...........Saint Paul
Hall, H. B..............Minneapolis
Hall, W. H............Minneapolis
Hall, Wm. E...........Maple Lake
Hallberg, C. A.........Minneapolis
Hallberg, O. E............Rochester
† Hallenbeck, D. F.........Rochester
Hallenbeck, G. A..........Rochester
† Halliday, P. V..........Minneapolis
Hallin, R. P............Worthington
Halloran, W. H.............Jackson
Halme, W. B...............Wadena
Halper, Bernard............Hibbing
Halpern, D. J.............Brewster
Halpin, J. E.............Rush City
Halvorsen, D. K.........Owatonna
Halvorson, J. W...........Goodhue
Hamlon, John S.......Fergus Falls
Hammar, L. M............Mankato
Hammes, E. M...........Saint Paul
Hammes, E. M., Jr.......Saint Paul
Hammon, John S.......Fergus Falls
† Hammond, J. F.........Saint Paul
† Haney, C. L..................Duluth
Hankerson, R. G....Minnesota Lake
Hanlon, D. G.............Rochester
Hannah, H. B..........Minneapolis
Hanover, R. D...International Falls
Hansen, C. O..........Minneapolis
Hansen, E. W..........Minneapolis
Hansen, O. S..........Minneapolis
† Hansen, R. E......Marysville, Calif.
Hansen, R. M..........Minneapolis
Hansen, Theo. M.........Albert Lea
† Hanson, A. M............Faribault
Hanson, E. O..............Carlton
Hanson, E. C.....New York Mills
Hanson, H. J...........Minneapolis
Hanson, H. B...........Saint Paul
Hanson, H. V...........Minneapolis
Hanson, J. W............Northfield
Hanson, LeRoy W....Pelican Rapids
Hanson, Lewis................Frost
Hanson, M. B.........Minneapolis

Hanson, M. C...........Minneapolis
Hanson, N. O............Rochester
‡ Hanson, S. M..........Sparta, Wis.
Hanson, Wm. A. H.....Minneapolis
Happe, L. J...........Minneapolis
Harbaugh, J. T..........Saint Paul
Harmon, G. E...........Saint Paul
Harrington, S. W.........Rochester
Harris, C. N...............Hibbing
† Harris, Evelyn S.......Fergus Falls
Harris, L. D...........Minneapolis
Harris, L. E..............Rochester
Harrison, P. W.........Worthington
Hart, Wm. E............Monticello
Hartfiel, H. A...........Montevideo
Hartfield, Wm. F.........Saint Paul
Hartig, H. A...........Minneapolis
Hartig, Marjorie.........Saint Paul
Hartjen, J. K...............Bemidji
Hartley, E. C............Saint Paul
Hartman, Evelyn.......Minneapolis
Hartnagel, G. F.........Red Wing
Hartung, E. H...........Claremont
Hartwich, R. F...............Winona
Hass, F. M.............Minneapolis
† Hassett, R. G...............Mankato
Hastings, D. R.........Minneapolis
Hastings, D. W.........Minneapolis
Hatch, W. E.................Duluth
Hauge, E. T............Minneapolis
Hauge, M. I..............Clarkfield
‡ Haugen, G. W.......Pensacola, Fla.
Haugen, J. A...........Minneapolis
Hauser, G. W..........Minneapolis
Hauser, V. P............Saint Paul
Havel, R. J.............Minneapolis
Haven, W. K...........Minneapolis
Havens, F. Z.............Rochester
Havens, Fred Z., Jr..Riverside, Calif.
† Havens, J. G. W..............Austin
Hawkinson, R. P........Minneapolis
Hawley, II, G. M. B......Red Wing
Hayes, A. F.............Saint Paul
Hayes, J. M............Minneapolis
Hayes, M. F.............Nashwauk
Hayles, Alvin B...........Rochester
Hays, A. T.............Minneapolis
Head, D. P.............Minneapolis
Healy, R. T....................Pierz
Hebbel, Robt...........Minneapolis
Hebeisen, M. B..............Chaska
Heck, F. J................Rochester
Heck, W. W............Saint Paul
Hedberg, G. A............Nopeming
Hedemark, H. H.........Ortonville
Hedemark, T. A..........Ortonville
Hedenstrom, F. G........Saint Paul
Hedenstrom, P. C..........Marshall
Hedin, R. F...............Red Wing
† Hegge, O. H.................Austin
† Hegge, R. S.................Austin
Heiam, Wm. C.................Cook
Heiberg, E. A.........Fergus Falls
Heiberg, O. M.........Worthington
Heilig, William R........Saint Paul
† Heilman, D. M. H........Rochester
Heilman, F. R............Rochester
Heimark, John J..........Rochester
Heimark, J. J..............Fairmont
‡ Heine, Geo. W.........Little Falls
Heinz, Ivy B..............Shakopee
Heinz, L. H...............Shakopee
Heise, Carl v.R.............Winona
Heise, Paul.................Winona
† Heise, Wm. F. C............Winona
Heise, Wm. v.R.............Winona
‡ Heisler, J. J...........Minneapolis
Helden, R. A.............Rochester
Helferty, J. K..........Boise, Idaho
† Helland, G. M.........Spring Grove
† Helland, J. W.........Spring Grove
Hellee, Ben I...........Minneapolis
† Helmholz, H. F..........Rochester
Helseth, H. K........Pelican Rapids
† Hempstead, B. E.........Rochester
Henderson, A. J. G...North St. Paul
Henderson, E. D..........Rochester
Henderson, J. W..........Rochester
Henderson, Lowell........Rochester
† Henderson, M. S..........Rochester
† Hendricks, Everett D......Rochester
Hendricks, E. J..........Saint Paul
† Hendrickson, J. F.......Minneapolis
Hengstler, Wm. H........Saint Paul
Henney, Wm. H...........McIntosh
Henrikson, E. C.........Minneapolis
† Henry, C. E.........Kirksville, Mo.
Henry, H. W..............Hinckley
Henry, J. E..................Milaca
Henry, M. O...........Minneapolis
Henry, M. R............Saint Peter
Hensel, C. N.............Saint Paul

† Hepper, Norman G........Rochester
Herbert, C. M., Jr.........Rochester
Herbert, W. L..........Minneapolis
Herbst, R. F................Willmar
Herman, S. M...........Saint Paul
Hermann, H. W........Minneapolis
Hermanson, P. E........Hendricks
Heron, R. C.............Saint Paul
Herrell, W. E.............Rochester
Herrmann, E. T.........Saint Paul
† Hertel, G. E...................Austin
Hertz, M. J..............Saint Paul
Hesdorffer, M. B.........Martinville
Hesla, Inman A..............Austin
† Hewitt, Edith S...........Rochester
† Hewitt, R. M.............Rochester
† Heyerdale, O. C..........Rochester
† Higgins, J. H..........Minneapolis
Higgs, W. W..........Park Rapids
Hightower, N. C., Jr...Temple, Tex.
Hildebrand, J. E............Bemidji
Hilding, A. C...............Duluth
† Hilger, A. Wm..........Saint Paul
Hilger, J. A.............Saint Paul
Hilger, L. D.............Saint Paul
Hilker, M. D............Saint Paul
Hill, Earl...............Minneapolis
Hill, Elmer M..........Minneapolis
Hill, F. E..................Duluth
Hill, J. R.................Rochester
† Hillis, S. J.....East Bradenton, Fla.
Hinckley, R. G.........Minneapolis
Hinderaker, H. P........Bird Island
Hines, E. A., Jr..........Rochester
Hiniker, L. P...........Saint Paul
Hiniker, Peter.............LeSueur
Hinz, W. E................Willmar
Hirschboeck, F. J............Duluth
Hirschfield, F. R........Minneapolis
† Hitchcock, C. R.........Minneapolis
Hochfilzer, J. J..........Saint Paul
Hodapp, R. V..............Willmar
Hodgson, Jane E.........Saint Paul
Hodgson, J. R............Rochester
Hoehn, David...........Holdingford
Hoeper, P. G..............Mankato
Hoff, H. O...................Duluth
Hoffbauer, F. W........Minneapolis
Hoffert, H. E...........Minneapolis
‡ Hoffman, M. S............Rochester
Hoffman, R. A.........Minneapolis
Hoffman, W. L.........Minneapolis
Hofmann, G. N...........Rochester
‡ Hoganson, D. E............Bemidji
† Hoidale, Andrew.............Tracy
Holcomb, Joel T..............
Marine-On-The-St. Croix
† Holcomb, O. W.........Saint Paul
Holland, C. R.............Rochester
† Hollands, W. H..............Fisher
Hollenhorst, R. W.........Rochester
Hollinshead, W. H.......Saint Paul
Holm, D. F.................Benson
Holm, H. H................Glencoe
*†Holm, P. F..........Sarasota, Fla.
Holman, C. B.............Rochester
Holmberg, C. J.........Minneapolis
Holmberg, Leroy J...........Canby
Holmen, R. W...........Saint Paul
Holmes, A. E.............Rush City
Holmstrom, C. H...........Warren
‡ Holt, A. H...........Ft. Knox, Ky.
Holt, J. E..............Saint Paul
† Holt, Prescott B..........Rochester
Holzapfel, F. C..........Minneapolis
Hom, L. Y. W.........Battle Lake
Hooper, Worth............Hastings
‡ Hopkins, G. W...........Saint Paul
‡ Horns, H. L...........Minneapolis
Horns, R. C............Minneapolis
Horton, B. T.............Rochester
Hottinger, R. C...........Janesville
† Houkom, Bjarne...............
Luskoto T. T., East Africa
Houkom, S. S................Duluth
Houle, R. J..........New Brighton
† House, Z. E.........Burbank, Calif.
Houston, D. M.........Park Rapids
Hovde, Rolf..............Winthrop
Hovland, M. L..........Minneapolis
Howard, M. I..............Mankato
Howard, M. A...........Saint Paul
Howard, R. B...........Minneapolis
Howard, S. E...........Minneapolis
Howard, W. S............Saint Paul
Howe, N. W.............Saint Paul
Howell, Carter W......Minneapolis
Howell, L. P.............Rochester
Hoyer, L. J................Windom
Hruza, Wm. J.............Madelia
Hubbard, O. E.............Brainerd
Hubin, E. G.............Sandstone
Hudec, E. R..................Echo

Hudspeth, Wm. T..........Madison
Huenekens, E. J........Minneapolis
† Huffington, H. L...........Mankato
† Huffington, Herb. L.......Waterville
Huizenga, K. A...........Rochester
Hullsiek, H. E...........Saint Paul
‡ Hullsiek, R. B..........Minneapolis
Hultgen, Wm. J..........Saint Paul
† Hultkrans, J. C.........Minneapolis
Hultkrans, R. E.........Minneapolis
Humphrey, E. W..........Moorhead
Humphrey, E. W., Jr.....Moorhead
Humphrey, W. R..........Stillwater
Hunt, A. B...............Rochester
† Hunt, A. F........Alhambra, Calif.
Hunt, R. C................Fairmont
Hunt, William............Rochester
Hunter, J. S..............Rochester
Hunter, M. H...........Farmington
Hunter, R. C..........Dayton, Ohio
† Hurd, Annah...........Minneapolis
Hurwitz, M. M..........Saint Paul
‡ Hutchinson, C. J..So. Boston, Mass.
Hutchinson, Henry.....Moose Lake
† Huxley, F. R.............Faribault
Hymes, Charles.........Minneapolis
Hynes, J. E............Minneapolis

† Ide, Arthur W...........Saint Paul
Ide, Arthur W., Jr.......Minneapolis
Idstrom, L. G..........Minneapolis
Ikeda, Kano.............Saint Paul
Indihar, John E., Jr.........Virginia
Ingalls, E. G., Jr.......Minneapolis
Ingebrigtson, E. K. G.....Moorhead
Ingerson, C. A...........Saint Paul
Inglis, Wm...........Redwood Falls
Irwin, Homer R............Hibbing
† Irvine, H. G...........Minneapolis
Iverson, R. M...........Minneapolis
Ivins, John C.............Rochester
Ivy, John H...............Rochester

Jackman, R. J............Rochester
† Jackson, Richard L.......Rochester
Jacobs, D. L...............Willmar
† Jacobs, J. C................Willmar
Jacobson, Clarence.........Chisholm
Jacobson, C. W........Breckenridge
Jacobson, F. C...............Duluth
Jacobson, W. E......St. Louis Park
James, Ellery.............Saint Paul
James, J. W.............Saint Paul
‡ Jampolis, R. W., San Francisco, Cal.
Janecky, A. G............Baudette
Janes, J. M...............Rochester
Janssen, M. E...........Saint Paul
Jarvis, M. A.............Saint Paul
Jay, A. R...............Minneapolis
Jensen, A. R.............New York
Jensen, A. M.............Brownton
Jensen, H. C............Minneapolis
† Jensen, M. J............Minneapolis
Jensen, N. K............Minneapolis
Jensen, R. A............Minneapolis
Jensen, T. J.................Duluth
Jensen, J. E..............Stillwater
‡ Jenson, R................New York
Jerome, Bourne.........Minneapolis
Jerome, E. E...........Minneapolis
Jeronimus, H. J.............Duluth
Jesion, J. W.............Saint Paul
Jessico, C. M................Duluth
Jeub, Robert P..........Minneapolis
Joffe, H. H................Virginia
Johanson, W. G..........Saint Paul
Johnson, Adelaide McF...Rochester
Johnson, Aldridge F.....Isle, Minn.
Johnson, Arthur B.......Minneapolis
Johnson, August E......Minneapolis
Johnson, C. E............Saint Paul
† Johnson, Carl E..........Saint Paul
Johnson, Carl Eric........Rochester
‡ Johnson, C. M..............Dawson
Johnson, Charles M., Jr....Rochester
Johnson, C. Percy............Tyler
Johnson, D. L...........Little Falls
Johnson, Edward A.........Virginia
Johnson, E. W..............Bemidji
‡ Johnson, Einer W., Jr.....Rochester
‡ Johnson, Edward A.........Virginia
Johnson, Emil W.......Minneapolis
‡ Johnson, H. C.....San Diego, Calif.
Johnson, Harry A.......Minneapolis
Johnson, Herbert.........Saint Paul
Johnson, Hobart C...North Mankato
Johnson, J. A...........Minneapolis
Johnson, J. W...........Minneapolis
Johnson, Julius.........Minneapolis
Johnson, K. E...............Duluth
Johnson, M. R..........Minneapolis

Johnson, Norman P......Minneapolis
Johnson, Norton T......Minneapolis
Johnson, Olga H..........Moorhead
Johnson, Orville H....Norfolk, Neb.
Johnson, Ralph B.........Lanesboro
Johnson, Ray G...........Stillwater
Johnson, Reinald G......Minneapolis
Johnson, Reuben A......Minneapolis
Johnson, Robert E.......Minneapolis
Johnson, Rogers............Wayzata
Johnson, Rudolph E..Ah Gwah-Ching
Johnson, R. J............Saint Paul
Johnson, V. M..............Dawson
Johnson, Wm. E............Morgan
Johnson, Y. T...........Minneapolis
Johnsrud, L. W............Hibbing
Johnston, Edward V.......Rochester
Johnston, L. F..............Winona
† Johnston, R. O.............Hibbing
Jolin, F. M...................Bovey
† Jones, Alvah W..........Red Wing
Jones, E. Mendelssohn....Saint Paul
Jones, David G.............Hopkins
‡ Jones, G. W..Ft. Leavenworth, Kan.
† Jones, H. W., Jr........Minneapolis
Jones, O. H...............Mankato
Jones, Richard..........Minneapolis
Jones, Richard F.........Rochester
Jones, R. H............Minneapolis
Jones, R. N............Saint Cloud
Jones, Robcliff V..........Rochester
Jones, W. R............Minneapolis
Jordan, Geo. I., Jr.......Rochester
† Jordan, Kathleen B. S..Granite Falls
Jordan, L. S..........Granite Falls
† Jordan, Stanley...........Rochester
Josewich, Alex.........Minneapolis
Josewski, R. J............Stillwater
Josselson, A. J.,....Alhambra, Calif.
Joyce, G. L..............Rochester
Judd, E. S., Jr...........Rochester
Judd, Walter H...Washington, D. C.
Juergens, H. M.........Belle Plaine
† Juergens, John L........Belle Plaine
Juergens, M. F...........Stillwater
Juers, E. H..............Red Wing
Juhl, John H...........Minneapolis
† Juliar, R. O.............Saint Clair
Jurdy, M. J............Minneapolis

Kaasa, L. J.............Saint Peter
Kabrick, O. A...........Saint Peter
Kaiser, Milton L..........New Ulm
Kalin, O. T............Minneapolis
Kallestad, L. L.............Wayzata
Kamman, G. R...........Saint Paul
† Kamp, Byron A..........Albert Lea
Kanne, E. R..............Brainerd
Kantar, Bruce L........Minneapolis
Kaplan, D. H............Saint Paul
Kaplan, Harold A......Minneapolis
Kaplan, J. J...........Minneapolis
Kapsner, A. T............Princeton
‡ Karges, L. E...Camp Atterbury, Ind.
Karleen, B. N..............Jackson
Karleen, C. I...........Minneapolis
Karlen, Markle...........Rochester
Karn, J. F...............Ortonville
Karon, I. M.............Saint Paul
Kasper, E. M............Saint Paul
Kath, R. H...............Arlington
‡ Kath, Louis J....Long Beach, Calif.
Katzberg, Lewis............Willmar
Kaufman, E. J............Appleton
Kaufman, H. J..........Minneapolis
Kaufman, W. B............Mankato
Kaufman, Wm. C..........Appleton
Kearney, R. W............Mankato
Kearns, Thomas P........Rochester
Keating, F. R., Jr.........Rochester
Keefe, R. E.............Saint Paul
Keil, M. A..............Albert Lea
Keith, H. M..............Rochester
† Keith, N. M..............Rochester
Keith, Paul J.................Milaca
Keithahn, E. E..........Sleepy Eye
Kelby, G. M............Minneapolis
Kelley, Walter R............Duluth
Kelly, A. C..................Duluth
Kelly, A. H..............Rochester
Kelly, J. F.............Cold Spring
Kelly, James H.............Wadena
Kelly, J. P.............Minneapolis
† Kelly, J. V.............Saint Paul
Kelly, R. T..............Nashwauk
† Kelsey, C. G.............Saint Paul
Kelsey, C. M............Saint Paul
Kemp, A. F................Mankato
Kenefick, E. V...........Saint Paul
Kennedy, C. C.........Minneapolis
Kennedy, G. L............Faribault
† Kennedy, Jane F........Minneapolis
Kennedy, R. L. J.........Rochester

	Kenney, F. D.	Rochester
‡	Kent, Geo. B.	Rochester
	Kenyon, T. J.	Saint Paul
	Kerkhof, A. C.	Minneapolis
	Kernohan, J. W.	Rochester
	Kesting, Herman	Saint Paul
	Kevern, J. L.	Henning
	Keyes, J. D.	Winona
‡	Keyes, R. W.	Ely
	Kiely, J. M.	Rochester
‡	Kiely, James P.	San Francisco, Calif.
	Kierland, R. R.	Rochester
	Kiesler, Frank, Jr.	Minneapolis
	Kilbride, E. A.	Worthington
‡	Kilby, Ralph A.	Charleston, S. Carolina
	Kimmel, G. C.	Red Wing
†	King, E. A.	Minneapolis
	King, F. W.	Oak Terrace
†	King, George L.	Saint Paul
	Kinkade, B. R.	Ada
	Kinports, E. B.	International Falls
	Kinsella, T. J.	Minneapolis
	Kirby, Thomas J., Jr.	Rochester
†	Kirk, G. P.	East Grand Forks
	Kirklin, B. R.	Rochester
	Kirklin, J. W.	Rochester
	Kistler, A. J.	Minneapolis
‡	Kitzberger, P. J.	New Ulm
	Klakeg, Clayton H.	Rochester
	Kleckner, Martin S.	Evanston, Ill.
	Klefstad, Lloyd H.	Greenbush
	Klein, Harry	Duluth
	Klein, Henry N.	Saint Paul
	Klein, Jos.	Saint Paul
	Klein, Wm. A.	Duluth
	Kletschka, H. D.	Brooklyn
	Klima, Wm. W.	Stewart
‡	Kline, R. F.	Alaska
	Knapp, F. N.	Duluth
	Knapp, M. E.	Minneapolis
	Knight, E. G.	Swanville
	Knight, R. T.	Minneapolis
†	Knight, Ray R.	Minneapolis
	Knoche, H. A.	Morgan
	Knoll, W. V.	Duluth
	Knudsen, Helen L.	Minneapolis
	Knutson, G. A.	Hallock
	Knutson, G. E.	Saint Paul
	Knutson, L. A.	Spring Grove
	Knutson, R. C.	Saint Paul
	Knutsson, Katherine H.	Rochester
	Koelsche, G. A.	Rochester
	Koenecke, Fred H., Jr.	Lakefield
	Koenigsberger, Chas.	Mankato
	Koepcke, G. M.	Minneapolis
	Kohlbry, Carl O.	Duluth
	Kolars, James J.	Faribault
	Kolb, Lawrence	Rochester
	Koller, Hermann M.	Minneapolis
	Koller, Louis R.	Minneapolis
	Koller, Robert	Minneapolis
	Kooda, Jennings C.	Morris
*	Koop, Severin H.	Richmond
	Korchik, John P.	Minneapolis
	Korda, Henry A.	Pelican Rapids
	Kortsch, Ferdinand P.	Prior Lake
	Koskela, Lauri	Shaker Heights, Ohio
	Kostick, W. R.	Fertile
	Kotchevar, F. R.	Eveleth
	Kottke, F. J.	Minneapolis
	Kotval, R. J.	Pipestone
	Koucky, R. W.	Minneapolis
	Koza, D. W.	St. Paul
	Kozberg, Oscar	Moose Lake
	Krause, C. W.	Fairmont
	Kremen, Arnold J.	Minneapolis
	Kreuzer, Titus	Marshall
	Krezowski, Thomas	St. Paul
	Krieser, A. E.	Anoka
	Kroboth, F. J., Jr.	Rochester
†	Kroll. Harry G.	Rochester
‡	Krout, R. M.	Rochester
	Krueger, V. R.	Nopeming
	Krusen, F. H.	Rochester
	Kruzick, S. J.	Sleepy Eye
	Krystosek, L. A.	Clara City
	Kucera, F. J.	Hopkins
	Kucera, S. T.	Northfield
	Kucera, Wm. J.	Minneapolis
	Kucera, William J., Jr.	Minneapolis
	Kugler, A. A.	St. Paul
	Kuhlmann, L. B.	Melrose
	Kulstad, O. S.	Dodge Center
	Kulzer, Nobert	Hastings
	Kunkel, W. M., Jr.	Rochester
†	Kurtin, H. J.	Blooming Prairie
†	Kurtin, Jos. J.	Blooming Prairie
	Kuske, A. W.	St. Paul
	Kusske, A. L.	New Ulm
†	Kusske, B. W.	St. Louis Park
	Kusske, D. R.	St. Paul
	Kusz, Clarence	Minneapolis
	Kvale, W. F.	Rochester

	LaBree, John	St. Louis Park
	LaBree, R. H.	Duluth
†	Lacy, Paul E.	Rochester
	Lagaard, S. M.	Minneapolis
	Laikola, L. A.	Adrian
†	Laird, A. T.	Duluth
	Lajoie, J. M.	Minneapolis
	Lake, C. F.	Rochester
	Lamb, H. Douglas	Minneapolis
	Lang, L. A.	Minneapolis
	Langhoff, A. H.	Mankato
	Lannin, B. G.	St. Paul
	Lannin, D. R.	St. Paul
	Lapierre, A. P.	Minneapolis
	Lapierre, J. T.	Minneapolis
	Larrabee, W. F.	Grosse Ile, Mich.
	Larsen, F. Wm.	Minneapolis
	Larson, Arnold	Detroit Lakes
	Larson, C. M.	Minneapolis
	Larson, Eva Jane	St. Paul
	Larson, G. E.	Cambridge
	Larson, J. T.	South St. Paul
	Larson, K. R.	St. Paul
	Larson, L. M.	Minneapolis
	Larson, Leonard M.	Oak Terrace
‡	Larson, Laren	Watertown
	Larson, Loren J.	Minneapolis
	Larson, L. J.	Bagley
	Larson, M. H.	Nicollet
	Larson, M. L.	St. Paul
	Larson, O. E. H.	Zumbrota
	Larson, P. N.	Minneapolis
	Larson, R. H.	Anoka
	Latterell, K. E.	Duluth
†	LaVake, R. T.	Minneapolis
	Law, Harrison E.	Virginia
	Lax, M. H.	St. Paul
	Laymon, C. W.	Minneapolis
†	Lazar, H. L.	Excelsior
	Lazarte, J. A.	Rochester
†	Leahy, Bartholomew	St. Paul
	Levenworth, R. O.	St. Paul
†	Leavitt, H. H.	Phoenix, Ariz.
	Lebowske, J. A.	Minneapolis
	Leck, P. C.	Austin
	Leddy, E. T.	Rochester
	Lee, H. W.	Brainerd
	Lee, N. J.	Tracy
†	Lee, W. N.	Claremont, Calif.
	Leemhuis, A. J.	Minneapolis
	Leggett, E. A.	Bemidji
	Leibold, H. H.	Parkers Prairie
	Leick, R. M.	St. Paul
	Leitch, Archibald	St. Paul
†	Leitschuh, L. F.	Winsted
	Leland, H. R.	Minneapolis
†	Lemon, W. S.	Clifton Forge, Va.
	Lenander, M. E.	St. Peter
	Lenarz, A. J.	Browerville
	Lende, Norman	Faribault
	Lenz, J. R.	Morton
	Lenz, Otto A.	Minneapolis
	Leonard, L. J.	Minneapolis.
	Leonard, Saml.	Minneapolis
†	Leopard, B. A.	Brownsville, Tex.
	Lepak, F. J.	Duluth
	Lepak, J. A.	St. Paul
†	Lerche, William	Cable, Wis.
	Lerner, A. R.	Minneapolis
†	Lescoe, Richard	Rochester
‡	Lester, M. J., Jr.	Truman
†	Lev, Ralph	Rochester
	Leven, N. L.	St. Paul
	Leverenz, C. W.	St. Paul
	Levin, B. G.	St. Paul
	Levitt, G. X.	St. Paul
	Lewis, A. J.	Henning
†	Lewis, B. L.	Rochester
	Lewis, C. W.	Henning
†	Lewis, C. B.	St. Cloud
	Lewis, F. J.	Minneapolis
‡	Lewis, J. S., Jr.	Minneapolis
†	Lexa, F. J.	Lonsdale
	Libert, J. N.	St. Cloud
	Lick, C. L.	St. Paul
‡	Lick, L. C.	Rochester
	Lick, Wm. J., Jr.	St. Paul
	Lieberman, N. S.	St. Paul
†	Liedloff, A. G.	Mankato
	Lien, R. J.	St. Paul
	Liffrig, W. W.	Red Wing
	Lightborn, E. L.	St. Paul
	Lilleberg, N. J.	St. Paul
	Lillehei, C. Walton	Minneapolis
	Lillehei, E. J.	Robbinsdale
	Lillie, H. I.	Rochester
	Lillie, John C.	Rochester
	Lima, L. R.	Montevideo
‡	Lind, C. J., Jr.	Ft. Sam Houston, Tex.
	Lindahl, M. J.	Sherburn
	Lindberg, A. L.	Wheaton
	Lindberg, A. C.	Minneapolis
	Lindberg, V. L.	Minneapolis
	Lindberg, W. R.	Minneapolis
	Lindblom, A. E.	No. Mankato
†	Linde, Herman	Cyrus
	Lindell, Robert	St. Paul
‡	Lindeman, R. J.	Montgomery, Ala.
	Lindgren, R. C.	Minneapolis
	Lindquist, R. H.	Minneapolis
	Linner, Gunnar	Minneapolis
	Linner, H. P.	Minneapolis
†	Linner, J. H.	Minneapolis
	Linner, P. W.	Minneapolis
	Lippman, E. S.	Minneapolis
	Lippman, H. S.	Minneapolis
	Lippmann, E. W.	Hutchinson
	Lipschultz, Oscar	Minneapolis
	Lipscomb, P. R.	Rochester
‡	Liss, H. R.	San Francisco
	Litchfield, John T.	Minneapolis
	Litin, E. M.	Rochester
	Litman, A. B.	Minneapolis
	Litman, S. N.	Duluth
	Lober, P. H.	Minneapolis
	Lofgren, Karl A.	Rochester
	Lofsness, S. V.	Oak Terrace
†	Logan, A. H.	Rochester
	Logan, G. B.	Rochester
	Logan, J. O.	Wadena
†	Logefeil, R. C.	Minneapolis
	Lohmann, J. G.	Pipestone
	Loken, S. M.	Saint Paul
	Loken, Theodore	Ada
	Lommen, P. A.	Austin
	Longfellow, H. W.	Brainerd
	Loomis, E. A.	Minneapolis
	Loomis, G. L.	Winona
	Lorentzen, E. S.	Detroit Lakes
‡	Lorton, W. L.	Junction City, Kan.
	Lott, F. H.	Minneapolis
	Love, F. A.	Carlos
	Love, J. G.	Rochester
	Lovett, Beatrice R.	Oak Terrace
	Lovshin, W. C.	Eveleth
	Lowe, E. R.	South Saint Paul
	Lowe, T. A.	South Saint Paul
	Lowry, Elizabeth C.	Minneapolis
	Lowry, Paul	Minneapolis
	Lowry, Thomas	Minneapolis
	Lucas, J. E.	Saint Paul
	Luckemeyer, C. J.	Saint Cloud
	Lueck, W. W.	Minneapolis
	Lufkin, N. H.	Minneapolis
	Lund, C. J. T.	Fergus Falls
	Lund, George	Minneapolis
	Lund, W. L.	Staples
	Lundberg, Ruth I.	Minneapolis
	Lundblad, R. M.	Clara City
	Lundblad, R. A.	Minneapolis
	Lundblad, S. W.	Minneapolis
	Lundell, C. L.	Granite Falls
	Lundgren, A. C.	Minneapolis
	Lundholm, A. M.	Saint Paul
	Lundquist, C. W.	Owatonna
	Lundquist, V. J. P.	Minneapolis
	Lundsten, L. C.	Bemidji
	Lundy, J. S.	Rochester
†	Luth, D. V.	Duluth
	Lynch, F. W.	Saint Paul
†	Lynch, M. J.	Minneapolis
‡	Lyons, Henry R.	Rochester
	Lysne, Henry	Minneapolis
	Lysne, Myron	Minneapolis

	MacCarthy, J. D.	Minneapolis
†	MacCarty, C. S.	Rochester
†	MacCarty, W. C.	Rochester
	MacDonald, D. A.	Minneapolis
	MacDonald, John	Minneapolis
	MacDonald, Roger A.	Little Fork
	MacFarlane, P. H.	Chisholm
	Mach, F. B.	Minneapolis
	Mach, R. F.	Pine City
	MacKenzie, D. A.	Rochester
	MacKinnon, D. C.	Minneapolis
	MacKinnon, H. N.	Rochester
	Macklin, W. E., Jr.	Willmar
‡	Mackoff, S. M.	Saint Paul
	MacLean, Alexander	Phoenix, Ariz.
*†	MacNie, John S.	Minneapolis
	MacRae, G. C.	Duluth
	Madden, J. F.	Saint Paul
	Madison, M. S.	Rochester
	Madland, R. S.	Saint Paul
	Maeder, E. C.	Minneapolis
	Maertz, R. W.	Faribault
	Maertz, W. F.	Saint Paul
	Magath, T. B.	Rochester
	Magney, F. H.	Duluth
	Magnuson, A. E.	Wheaton
	Magnuson, R. C.	Cambridge
‡	Magraw, R. M.	Minneapolis
	Mahle, D. G.	Plainview

	Mahowald, Aloys	Fergus Falls
	Maitland, E. T.	Jackson
†	Maland, C. O.	Minneapolis
	Malerich, J. A.	West Saint Paul
	Malmstrom, J. A.	Virginia
†	Maloney, W. F.	Minneapolis
	Manger, W. M.	Rochester
	Mankey, J. C.	Minneapolis
†	Mankin, H. T.	Rochester
‡	Mankin, H. W.	Rochester
†	Mann, F. C.	Rochester
	Mann, F. D.	Rochester
	Mann, Joseph D.	Rochester
	Mann, R. H.	Rochester
‡	Manning, Phil R.	Rantoul, Ill.
†	Manson, F. M.	Worthington
	March, K. A.	Cambridge
†	Marcley, W. J.	Minneapolis
	Marking, G. H.	Minneapolis
‡	Markle, G. B., IV	Ft. Monroe, Va.
	Marks, R. W.	Saint Paul
	Marlow, G. V.	St. Paul
	Marshall, C. M.	Crosby
	Martens, T. G.	Rochester
	Martin, A. C.	Luverne
	Martin, D. L.	Saint Paul
‡	Martin, G. R.	Minneapolis
	Martin, G. M.	Rochester
†	Martin, T. P.	Arlington
	Martin, W. C.	Duluth
	Martin, W. J.	Rochester
	Martineau, J. L.	Saint Paul
	Martinson, C. J.	Wayzata
	Martinson, E. J.	Wayzata
	Masson, Duncan M.	Rochester
†	Masson, J. C.	Rochester
	Masson, J. K.	Rochester
†	Matchan, G. R.	Saint Paul
	Mathieson, D. R.	Rochester
	Matthews, James H.	Minneapolis
	Mattill, P. M.	Oak Terrace
	Mattison, P. A.	Winona
	Mattson, A. D.	Saint James
	Mattson, H. A. N.	Minneapolis
	Maxeiner, S. R.	Minneapolis
‡	Maxeiner, S. R., Jr.	Rochester
†	Maxfield, Robert G.	Rochester
	Maxwell, J. B.	Rochester
	Mayne, J. G.	Rochester
	Mayne, R. M.	Nopeming
	Mayo, C. W.	Rochester
*	Maytum, Chas. K.	Rochester
	McBean, J. B.	Rochester
	McBurney, R. P.	Nopeming
	McCabe, J. S.	Saint Paul
	McCaffrey, F. J.	Minneapolis
	McCain, D. F.	Bemidji
	McCain, D. L.	Saint Paul
	McCann, E. J.	Minneapolis
	McCannel, M. A.	Minneapolis
	McCarran, S. P.	Rochester
	McCarten, F. M.	Stillwater
	McCarthy, A. M.	Willmar
‡	McCarthy, Donald	Saint Paul
	McCarthy, J. J.	Saint Paul
	McCarthy, W. R.	Saint Paul
	McCartney, J. S.	Minneapolis
†	McCarty, P. D.	Ely
†	McClanahan, J. H.	White Bear Lake
	McClanahan, T. S.	White Bear Lake
	McCloud, C. N., Jr.	Saint Paul
†	McClure, Rensselaer, Jr.	Rochester
	McConahey, W. M., Jr.	Rochester
	McCormick, D. P.	Minneapolis
†	McCoy, Mary K.	Duluth
†	McDaniel, Orianna	Minneapolis
†	McDonald, A. L.	Duluth
	McDonald, J. R.	Rochester
	McDonald, O. G.	Duluth
	McDonald, W. J.	Crookston
	McDowell, J. P.	Saint Cloud
	McEnaney, C. T.	Owatonna
	McEwan, Alexander	Saint Paul
	McFarland, A. H.	Minneapolis
‡	McFarlane, J. A.	Rochester
	McGandy, R. F.	Minneapolis
	McGeary, G. E.	Minneapolis
‡	McGeary, M. D.	Oceanside, Calif.
	McGroaty, B. J.	Saint Paul
	McGroaty, J. J.	Easton
	McHaffie, O. L.	Duluth
	McInerny, M. W.	Minneapolis
	McIntire, H. M.	Waseca
‡	McIntire, S. F.	Rochester
	McIntyre, J. A.	Owatonna
†	McIver, Bert A.	Lowry
	McKaig, A. M.	Red Lake Falls
	McKaig, C. B.	Pine Island
†	McKee, Robert E.	McIver
	McKelvey, John L.	Minneapolis
	McKenna, Elizabeth	Austin
	McKenna, J. K.	Austin
	McKenna, M. J.	Grand Rapids
	McKenzie, C. H.	Minneapolis
	McKenzie, Eva E.	Saint Paul
	McKinlay, C. A.	Minneapolis
	McKinney, F. S.	Minneapolis
	McLane, W. O.	Brainerd
*†	McLaren, J. M.	Minneapolis
	McLaughlin, B. H.	Minneapolis
‡	McLeod, J. J.	Japan
	McLeod, J. L.	Grand Rapids
	McMahon, M. J.	Green Isle
	McManus, W. F.	Princeton
	McMorris, R. O.	Rochester
	McMurtrie, W. B.	Minneapolis
	McNeil, J. J.	Minneapolis
	McNutt, J. R.	Duluth
	McPheeters, H. O.	Minneapolis
†	McQuarrie, Irvine	Minneapolis
	McWhorter, H. E.	Rochester
	Mead, C. H.	Duluth
	Meade, J. R.	Saint Paul
	Mears, B. J.	Saint Paul
	Mears, R. F.	Northfield
†	Mears, Thomas W.	Rochester
	Medelman, J. P.	Saint Paul
†	Medoff, Alvin S.	Rochester
	Meinert, A. E.	Winona
	Melancon, J. F.	Saint Paul
	Melby, Benedik	Blooming Prairie
†	Mellby, O. F.	Thief River Falls
	Meller, R. L.	Minneapolis
	Melzer, G. R.	Lyle
	Menges, Charles G. H.	Rochester
	Menold, W. F.	Saint Paul
	Mensheha, Nicholas	Forest Lake
	Mercil, W. F.	Crookston
	Merkert, C. E.	Minneapolis
	Merkert, G. L.	Minneapolis
	Merner, T. B.	Faribault
†	Merrick, C. T.	Saint Paul
	Merrick, R. L.	Saint Paul
†	Merrill, Elisabeth	Minneapolis
	Merrill, R. W.	Morris
	Merriman, L. L.	Duluth
	Merritt, W. A.	Rochester
‡	Metcalf, N. B.	Princeton
	Meyer, A. A.	Melrose
	Meyer, A. J.	Minneapolis
†	Meyer, E. L.	Minneapolis
	Meyer, F. C.	Kenyon
‡	Meyer, J. O.	Grand Rapids
	Meyer, P. F.	Faribault
	Meyer, Robert J.	Minneapolis
	Meyer, Robert P.	Faribault
†	Meyerding, E. A.	Saint Paul
	Michael, Isaac E.	Rochester
	Michael, J. C.	Minneapolis
	Michel, H. H.	Minneapolis
	Michels, R. P.	Willmar
	Michelson, H. E.	Minneapolis
	Michienzi, L. J.	Saint Paul
†	Mickelsen, Emma F.	Minneapolis
	Mickelson, J. C.	Mankato
	Midthune, A. S.	Lake Park
	Milhaupt, E. N.	Saint Cloud
	Miller, A. L.	Minneapolis
*	Miller, E. W.	Anoka
	Miller, Harold E.	Minneapolis
	Miller, Herman	Grand Meadow
	Miller, Hugo E.	Minneapolis
	Miller, J. C.	Minneapolis
‡	Miller, J. M.	Indianapolis, Ind.
	Miller, R. D.	Rochester
	Miller, R. H.	Rochester
	Miller, Samuel	Albert Lea
†	Miller, V. I.	Mankato
	Miller, W. R.	Red Wing
	Miller, W. T.	West Saint Paul
	Miller, Z. R.	Saint Paul
	Millett, D. K.	Minneapolis
	Mills, J. L.	Winnebago
	Mills, S. D.	Rochester
	Milnar, F. J.	Saint Paul
	Milton, J. S.	Minneapolis
	Minge, R. K.	Worthington
	Minno, Alexander M.	Rochester
	Minsky, A. A.	Minneapolis
	Minty, E. W.	Duluth
	Misbach, W. D.	Fairmont
	Mitby, I. L.	Minneapolis
	Mitchell, B. D.	Minneapolis
	Mitchell, E. C.	Minneapolis
	Mitchell, M. T.	Minneapolis
	Mixer, H. W.	Minneapolis
	Moberg, C. W.	Detroit Lakes
	Moe, J. H.	Minneapolis
*	Moe, R. J.	Duluth
	Moe, Thos.	Moose Lake
	Moehn, John T.	Minneapolis
	Moehring, H. G.	Duluth
	Moen, J. K., Jr.	Minneapolis
	Moersch, F. P.	Rochester
	Moersch, H. J.	Rochester
	Moga, J. A.	Saint Paul
	Molander, H. A.	Saint Paul
	Molenaar, Robert E.	Cannon Falls
	Mollers, T. P.	Soudan
†	Monahan, Elizabeth	Minneapolis
	Monahan, Robert H.	St. Paul
	Monroe, P. B.	Cloquet
	Monserud, N. O.	Cloquet
	Monson, E. M.	Minneapolis
	Monson, L. J.	Canby
	Monsour, K. J.	Rochester
	Montgomery, Hamilton	Rochester
	Mooney, Robert	St. Paul
	Moore, George E.	Buffalo, N. Y.
	Moore, I. H.	Minneapolis
†	Moores, Kenneth D.	Rochester
	Moorhead, Marie	Minneapolis
	Moos, D. J.	Minneapolis
†	Moquin, Marie A.	Saint Paul
†	Morehead, D. E.	Owatonna
†	Moren, J. A.	Saint Paul
	Morgan, H. O.	Amboy
	Moriarty, Berenice	Saint Paul
	Moriarty, Cecile R.	Saint Paul
	Mork, A. H.	Anoka
	Mork, F. E.	Anoka
	Morlock, C. G.	Rochester
	Morris, K. L.	Rochester
	Morrison, C. J.	Minneapolis
	Morse, M. P.	LeRoy
	Morsman, L. W.	Hibbing
	Mortensen, J. D.	Rochester
	Mortensen, N. G.	Minneapolis
‡	Morton, G. H.	Scott Air Base, Ill.
	Mosby, M. E.	Long Prairie
	Moses, R. R.	Kenyon
	Mosser, Donn G.	Minneapolis
	Mouritsen, G. J.	Fergus Falls
	Moyer, J. B.	Duluth
	Muir, W. F.	Browns Valley
‡	Mulder, D. W.	Rochester
	Mulholland, W. M.	Minneapolis
	Muller, A. E.	North Saint Paul
	Muller, R. T.	Saint Paul
	Mulligan, A. M.	Brainerd
	Mundahl, H. R.	Saint Paul
	Munson, M. S.	Barnum
	Murphy, E. P.	Minneapolis
	Murphy, J. T.	Saint Paul
	Murphy, J. E.	Marshall
	Murray, R. A.	Hibbing
	Musachio, N. F.	Foley
	Mussey, Mary E.	Rochester
†	Mussey, R. D.	Rochester
	Musty, N. J.	Minneapolis
‡	Myers, C., III	San Antonio, Tex.
	Myers, J. A.	Minneapolis
	Myers, T. T.	Rochester
	Myhre, J. A.	Minneapolis
	Myre, C. R.	Paynesville
‡	Myre, T. T.	Paducah, Ky.

	Naegeli, A. E.	Newport Beach, Calif.
	Nagel, H. D.	Waconia
	Nash, L. A.	Saint Paul
	Naslund, A. W.	Minneapolis
	Nauth, B. S.	Minneapolis
	Navratil, D. R.	Montgomery
‡	Neal, J. M.	St. Paul
	Nealy, D. E.	Adrian
	Neary, R. P.	Minneapolis
	Neel, H. B.	Albert Lea
	Neff, W. S.	Virginia
	Nehring, J. P.	Preston
‡	Neils, V. E.	Sauk Rapids
†	Nelson, A. S.	Baltimore
	Nelson, Bernette G.	Minneapolis
	Nelson, Bernice A.	Minneapolis
	Nelson, C. A.	Worthington
	Nelson, C. B.	Minneapolis
	Nelson, C. E. J.	Albert Lea
	Nelson, David	Alexander
	Nelson, E. N.	Minneapolis
	Nelson, E. J.	Owatonna
	Nelson, G. E.	Fairfax
	Nelson, Harvey	Minneapolis
†	Nelson, H. E.	Crookston
	Nelson, L. S.	Minneapolis
†	Nelson, L. A.	Saint Paul
	Nelson, M. C.	Minneapolis
	Nelson, Maxine O.	Minneapolis
	Nelson, M. S.	Granite Falls
	Nelson, N. P.	Minneapolis
	Nelson, O. L. N.	Minneapolis
	Nelson, Roy A.	Fergus Falls
	Nelson, R. L.	Duluth
†	Nelson, Wm. C.	Rochester
	Nelson, W. I.	Minneapolis
	Nelson, W. O. B.	Fergus Falls
	Nerenberg, S. T.	Minneapolis
	Nesbitt, Samuel	Minneapolis

	Nesheim, M. O.	Emmons
	Nessa, C. B.	Saint Cloud
	Nesse, J. A.	Austin
	Nesset, L. B.	Minneapolis
	Nesset, W. D.	Minneapolis
	Neumaier, Arthur	Glencoe
	Neuman, H. W.	Rochester
	Neumann, C. A.	Lewiston
	Neumeister, Charles	Minneapolis
	Nice, Charles M.	Minneapolis
	Nichols, Donald R.	Rochester
	Nicholson, M. A.	Duluth
	Nickerson, J. R.	Heron Lake
	Nickerson, N. D.	Fairmont
	Nielson, A. M.	Northfield
	Nietfeld, A. B.	Sauk Centre
	Nilson, H. J.	North Mankato
	Nimlos, K. O.	Saint Paul
†	Nimlos, Lenore O.	Saint Paul
	Ninneman, N. N.	Waconia
	Nisius, George	Duluth
	Nixon, J. B.	Crosby
	Noble, J. F.	St. Paul
	Noble, J. L.	Saint Paul
	Noonan, W. J.	Minneapolis
	Noran, A. S. N.	Minneapolis
	Noran, H. H.	Minneapolis
	Norberg, C. E.	Cloquet
	Nord, R. E.	Minneapolis
	Nordin, G. T.	Minneapolis
	Nordland, Martin	Minneapolis
	Nordland, Martin, Jr.	Minneapolis
	Nordman, W. F.	Mora
	Norman, J. F.	Crookston
	Normann, S. T., Jr.	Waseca
	Norris, N. T.	Caledonia
	Norum, H. A.	Minneapolis
	Norval, M. A.	Minneapolis
†	Noth, H. W.	Minneapolis
†	Novak, E. E.	New Prague
	Nuessle, W. G.	Springfield
	Nuetzman, A. W.	Faribault
	Nutting, R. E.	Duluth
	Nydahl, M. J.	Minneapolis
	Nye, Katherine A.	Saint Paul
	Nye, Lillian L.	Saint Paul
	Nygren, W. T.	Braham
	Nylander, E. G.	Minneapolis
*†	Nystrom, Ruth G.,	Malibu Beach, Cal.
	Nywall, D. D.	Slayton

	O'Brien, J. C.	Saint Paul
	O'Brien, L. T.	Breckenridge
†	O'Connor, D. C.	Eden Valley
	O'Connor, L. J.	Saint Paul
	O'Donnell, D. M.	Ortonville
	O'Donnell, J. E.	Minneapolis
	O'Hanlon, J. A.	Minneapolis
	O'Kane, T. W.	Saint Paul
	O'Keefe, J. P.	Saint Cloud
†	O'Keefe, Mathew	Rochester
†	O'Leary, John B.	St. Paul
	O'Leary, J. H.	Thief River Falls
	O'Leary, P. A.	Rochester
‡	O'Malley, Valentine	Saint Paul
	O'Neil, J. C.	Duluth
	O'Phelan, E. Harvey	Minneapolis
	O'Reilley, B. E.	Saint Paul
‡	O'Shaughnessy, E. J.	Rochester
	Oberg, C. M.	Minneapolis
	Ochsner, C. G.	Wabasha
	Ockuly, Orville	Saint Paul
	Odel, H. M.	Rochester
	Odland, M. E.	Detroit Lakes
	Odland, Olin	Granite Falls
	Oeljen, S. C. G.	Waseca
	Ogburn, Paul L.	Rochester
	Ogden, Warner	Saint Paul
	Ohage, Justus	Saint Paul
	Olds, G. H.	New Richland
	Olive, J. T., Jr.	Rochester
	Oliver, I. L.	Graceville
	Oliver, James	Moorhead
	Olmanson, E. G.	Saint Peter
	Olsen, A. M.	Rochester
	Olsen, E. G.	Minneapolis
	Olsen, R. L.	Saint Paul
	Olson, Albert E.	Duluth
	Olson, Albert J.	Owatonna
	Olson, Alton C.	Minneapolis
	Olson, Archibald O.	Duluth
	Olson, Carl J.	Minneapolis
	Olson, Carlton K.	Minneapolis
	Olson, Charles A.	Saint Paul
	Olson, Chester J.	Belle Plaine
	Olson, Detlof M.	Minneapolis
	Olson, Duane O. C.	Gaylord
	Olson, Ernest A.	Pine Island
	Olson, Grant E.	West Concord
	Olson, Lillian A.	Ah-Gwah-Ching
†	Olson, Olof A.	Minneapolis
	Onsgard, L. K.	Houston
	Openshaw, C. R.	Rochester
	Oppegaard, C. L.	Crookston
*	Oppegaard, M. O.	Crookston
	Oppen, E. G.	Minneapolis
	Oppen, M. G.	Wayzata
	Opsahl, L. J.	Willmar
	Opstad, E. T.	Oak Terrace
	Orr, B. A.	Faribault
‡	Orwoll, H. S.	Japan
	Osborn, D. O.	Austin
	Osborn, J. E.	Rochester
	Ostergaard, Erling	Evansville
	Ostergren, E. W.	Saint Paul
	Ostling, B. C.	Kerkhoven
	Otto, H. C.	Frazee
	Ouellette, A. J.	Saint Paul
	Ourada, A. L.	Ceylon
	Owen, Charles A., Jr.	Rochester
	Owen, H. W.	Rochester
	Owens, F. M., Jr.	Saint Paul
	Owens, W. A.	Montevideo

‡	Paciotti, V. J.	St. Paul
	Page, R. L.	Saint Charles
	Palen, B. J.	Minneapolis
	Palmer, C. F.	Albert Lea
	Palmer, H. A.	Blackduck
†	Palmerton, E. S.	Minneapolis
	Pankratz, P. J.	Mountain Lake
	Papermaster, Ralph	Two Harbors
	Papermaster, T. C.	Minneapolis
	Park, W. E.	Minneapolis
	Parker, C. W.	Wadena
	Parker, H. L.	Rochester
†	Parker, O. W.	Duluth
	Parker, Philip J.	Thief River Falls
	Parker, R. L.	Rochester
	Parker, W. E.	Sebeka
	Parker, Wilbert H.	Chisholm
	Parkhill, Edith M.	Rochester
	Parson, E. I.	Duluth
	Parson, E. L. B.	Elbow Lake
	Parson, L. R.	Elbow Lake
	Parsons, R. L.	Monterey
	Parsons, W. B., Jr.	Rochester
	Pasek, A. W.	Cloquet
‡	Pasek, E. A.	Chisago City
	Patch, O. B.	Duluth
	Patrick, Robert	Rochester
	Patterson, H. D.	Slayton
	Patterson, W. L.	Fergus Falls
	Paulson, Elmer	Worthington
	Paulson, J. A.	Rochester
	Paulson, T. S.	Fergus Falls
	Paulson, Wallace	St. Paul
	Paynter, C. R.	Rochester
†	Pearsall, R. P.	Virginia
	Pearson, B. F.	Shakopee
	Pearson, F. R.	Saint Paul
	Pearson, M. M.	Saint Paul
†	Pearson, R. T.	Shakopee
	Pease, Gertrude L.	Rochester
	Peck, Lewellyn R.	Hastings
	Pedersen, A. H.	Saint Paul
	Pedersen, R. C.	Duluth
	Pederson, Robert L.	Willmar
	Peltier, Leonard F.	Minneapolis
‡	Peluso, Charles R.	Minneapolis
‡	Pemberton, A. H.	Rochester
†	Pemberton, John	Rochester
	Pender, John W.	Rochester
†	Penhall, F. W.	Willmar
	Penk, E. L.	Springfield
	Penn, G. E.	Mankato
	Pennie, D. F. V.	Duluth
	Peppard, T. A.	Minneapolis
	Perlman, E. C.	Minneapolis
	Perlman, Herschel	Minneapolis
	Perry, Harold	Rochester
	Person, J. P.	Albert Lea
	Person, Waldemar N.	Rochester
	Pertman, H. L.	Minneapolis
	Peteler, Jennings L.	Minneapolis
	Pertl, A. L.	Canby
	Peters, G. A.	Rochester
†	Peters, William J.	Rochester
	Petersen, D. H.	Northfield
	Petersen, G. L.	Minneapolis
†	Petersen, J. R.	Minneapolis
	Petersen, M. C.	Rochester
	Petersen, P. C.	Minneapolis
	Petersen, W. E.	Minneapolis
	Peterson, D. B.	Saint Paul
	Peterson, D. H.	Saint Paul
	Peterson, E. N.	Virginia
	Peterson, H. O.	Saint Paul
	Peterson, H. W.	Minneapolis
	Peterson, J. L. E.	Saint Paul
	Peterson, J. H.	Duluth
	Peterson, Kenneth A.	Marshall
	Peterson, K. H.	Hutchinson
	Peterson, N. P.	Minneapolis
	Peterson, O. H.	Minneapolis
†	Peterson, O. H., Jr.	Minneapolis
	Peterson, Palmer	Minneapolis
	Peterson, P. E.	Minneapolis
	Peterson, R. A.	Vesta
	Peterson, Stanley C.	Austin
	Peterson, W. C.	Minneapolis
	Peterson, W. E.	Willmar
	Peterson, W. H.	Spring Valley
	Peterson, W. Henry	Minneapolis
	Petit, J. V.	Minneapolis
	Petit, L. J.	Minneapolis
	Petraborg, H. T.	Aitkin
	Pettersen, George	Mabel
†	Pettet, John	Rochester
	Pewters, J. T.	Minneapolis
	Peyton, W. T.	Minneapolis
	Phares, O. C.	Saint Cloud
	Phares, W. S.	Rochester
	Phelps, K. A.	Minneapolis
†	Philip, D. R.	Windom
	Pierce, C. H.	Wadena
	Pierce, J. R.	Virginia
	Pierce, R. B.	Renville
	Pierson, R. F.	Slayton
†	Piper, M. C.	LaCanada, Calif.
	Piper, W. A.	Mountain Lake
	Plasha, M. K.	Glenwood
	Plass, H. F. R.	Minneapolis
†	Platou, E. S.	Minneapolis
	Plimpton, N. C., Jr.	Minneapolis
†	Plondke, F. J.	Saint Paul
	Plotke, H. L.	Saint Paul
	Plucker, Milton W.	Clarkfield
	Pogue, R. E.	Watertown
	Pohl, J. F. M.	Minneapolis
†	Poirier, Jos. A.	Forest Lake
	Polley, Howard F.	Rochester
	Pollock, David K.	Minneapolis
	Polski, P. G.	South Saint Paul
	Polzak, J. A.	Minneapolis
	Pone, John	Silver Lake
	Ponterio, J. E.	Shakopee
	Pool, T. L.	Rochester
	Poppe, F. H.	Minneapolis
	Porter, O. M.	Willmar
	Potek, David	Minneapolis
	Potter, R. B.	Minneapolis
	Power, J. E.	Duluth
†	Powers, Fred H.	Rochester
	Powers, W. W.	Rochester
	Prangen, A. DeH.	Rochester
†	Pratt, F. J.	Minneapolis
	Pratt, F. J., Jr.	Minneapolis
‡	Pratt, G. F.	Rochester
‡	Pratt, J. H., Jr.	Rochester
	Preine, Irving A.	Minneapolis
†	Preisinger, J. W.	Renville
	Preston, P. J.	Minneapolis
	Prickman, L. E.	Rochester
	Priest, R. E.	Minneapolis
	Priestley, J. T.	Rochester
†	Prim, J. A.	Minneapolis
	Prins, L. R.	Albert Lea
	Proeschel, R. K.	Willmar
	Proffitt, W. E.	Minneapolis
	Proshek, C. E.	Minneapolis
	Pruitt, R. D.	Rochester
	Pugh, D. G.	Rochester
	Pumala, E. E.	Warren
	Purves, G. H.	Hendricks
	Puumala, R. H.	Cloquet
	Pyle, Marjorie M.	Nopeming

	Quanstrom, V. E.	Brainerd
	Quattlebaum, Frank	Saint Paul
	Quello, R. O. B.	Minneapolis
	Quer, E. A.	Rochester
†	Quigley, W. P.	Brooklyn, N. Y.
†	Quist, H. W.	Minneapolis
	Quist, H. W., Jr.	Minneapolis

	Raadquist, C. S.	Hibbing
	Raattama, John W.	Keewatin
†	Rabens, R. A.	Rochester
	Racer, Harley J.	Gibbon
	Raetz, S. J.	Maple Lake
	Rajala, Arnold I.	Grand Rapids
	Ralph, J. R.	Saint Paul
	Ralston, D. E.	Rochester
†	Ramsey, W. R.	Saint Paul
	Randall, A. M.	Ashby
	Randall, L. M.	Rochester
	Randall, Raymond V.	Rochester
	Ransom, H. R.	Osseo
†	Ransom, M. L.	Hancock
	Rasmussen, R. C.	Saint Paul
	Rasmussen, W. C.	Rochester
	Ravits, H. G.	Saint Paul
	Rayner, Ralph R.	Gibbon
	Rea, C. E.	Saint Paul
	Reader, D. R.	Minneapolis
	Reed, Paul	Virginia
	Reese, G. A.	Rochester

Reff, A. R..................Crookston
Regnier, E. A.............Minneapolis
Reid, J. W.................Saint Paul
Reid, L. M....................Excelsior
Reif, H. A.................Minneapolis
Reif, H. J.................Saint Cloud
Reiley, R. E..............Minneapolis
† Reineke, G. F...............New Ulm
Reitemeier, R. J............Rochester
Reitmann, J. H..................Anoka
ReMine, P. G...............Rochester
ReMine, W. H., Jr..........Rochester
Remole, W. D............Minneapolis
Remsberg, R. R..................Tracy
† Replogle, W. H...Los Angeles, Calif.
Resch, J. A...............Minneapolis
‡ Retter, Richard....Camp Rucker, Ala.
Rice, C. O................Minneapolis
Rice, Frank B............Minneapolis
Rice, Fred A.............Minneapolis
Rice, H. G....................Moorhead
Rice, Roberta G...Grand Island, Neb.
Richards, E. T. F..........Saint Paul
Richards, W. B...........Saint Cloud
‡ Richardson, E. J., Jr.......Saint Paul
Richardson, R. J............Saint Paul
Richdorf, L. F............Minneapolis
* Richter, E. H............Fergus Falls
Rick, P. F. W...............Saint Paul
* Ridgway, A. M............Annandale
Ridley, R. W................Rochester
Rieke, W. W...................Wayzata
Rieschl, Elizabeth K............Jordan
Rigler, L. G..............Minneapolis
‡ Rigler, R. G.........Portsmouth, Va.
Ringle, O. F....................Walker
Rinkey, Eugene............Saint Paul
Riordan, Elsie M.........Minneapolis
† Ripepi, James D............Rochester
† Ritzinger, Frederik R......Lakefield
Risch, R. E...............Minneapolis
Risser, A. F..............Stewartville
Ritchie, W. P..............Saint Paul
Ritt, A. E....................Saint Paul
Rizer, D. K................Minneapolis
Rizer, R. I.................Minneapolis
Robb, E. F..................Minneapolis
† Robbins, C. P.................Winona
Robbins, O. F.............Minneapolis
Roberts, L. J..............Minneapolis
Roberts, O. W...............Owatonna
Roberts, S. W............Minneapolis
† Roberts, W. B...........Minneapolis
† Robertson, J. B..........Minneapolis
Robertson, P. A..................Austin
Robilliard, C. M.............Faribault
Robinett, R. W..........Worthington
Robinson, C. O............Saint Paul
Rocknem, R. E.........Minneapolis
Rockwell, C. V..........Minneapolis
Rockwood, P. H.........Fergus Falls
† Rodda, F. C..............Minneapolis
Rodgers, R. S............Minneapolis
Roehlke, A. B.................Elk River
Roemer, H. J.....................Winona
† Rogers, Arnold G............Rochester
Rogers, C. W....................Winona
Rogers, S. F..................Saint Paul
† Rogin, Norton......Saint Louis Park
Rogne, W. G...........Spring Grove
Roholt, C. L.................McIntosh
‡ Roholt, H. B....................Fosston
† Rohrer, Christian....Des Moines, Ia.
Rokala, H. E....................Virginia
Rolig, D. H....................Saint Paul
Rollie, O. O..................Saint Paul
Rollins, Pat..............Saint Charles
Rollins, T. G....................Elmore
Rome, H. P...................Rochester
‡ Romness, J. O................Rochester
‡ Romness, Kenneth........Minneapolis
† Rood, D. C.....Santa Barbara, Calif.
Rooke, E. D..................Rochester
Rorem, Jos. A..................Appleton
† Rosander, Phyllis ....Minneapolis
Rose, J. T......................Lakefield
Rosenbaum, D. L.........Minneapolis
Rosendahl, F. G..........Minneapolis
Rosenfield, A. B..........Minneapolis
Rosenholtz, B. I............Saint Paul
Rosenow, J. H...........Minneapolis
Rosenthal, F. H....................Austin
Rosenthal, Robert..........Saint Paul
Rosenwald, R. M.........Minneapolis
Ross, A. J....................Minneapolis
Rossberg, R. A.....................Morris
Rossen, Ralph ....Hastings
Roth, F. D......................Mankato
Roth, G. C....................Saint Paul
Rothmen, Morris.........Minneapolis
Rothschild, H. J...........Saint Paul
Rotnem, O. M.................Harmony
Roust, H. A..................Montevideo
Rovelstad, R. A...............Rochester

Rowe, O. W...................Duluth
Rowe, W. H.................Fairmont
Rowell, F. A........Thief River Falls
Rowles, E. K................Coleraine
Roy, P. C.....................Saint Paul
Rozycki, Anthony.........Pine River
Rucker, C. W...............Rochester
Rucker, W. H............Minneapolis
Rud, N. E...................Minneapolis
Rudie, C. N..................Saint Peter
Rudie, P. S.........................Duluth
Ruff, John D..................Rochester
Ruggles, G. M..........Forest Lake
† Ruhberg, G. M.......Tarzana, Calif.
Rukavina, J. G...................Hibbing
‡ Rumpf, C. W..................Faribault
Runquist, J. M....................Duluth
Rushton, I. G..................Rochester
Russ, H. H....................Blue Earth
Russeth, A. N............Minneapolis
Rusten, E. M...............Minneapolis
* Rutherford, W. C.............Brainerd
Rutledge, L. H.........Detroit Lakes
Ryan, J. J......................Saint Paul
Ryan, J. M.....................Saint Paul
Ryan, W. J..........................Duluth
Rydburg, W. C............Minneapolis
† Rydland, A. D...........Minneapolis
Rygh, H. N.......................Atwater
Rynda, E. R..............New Prague
Rynearson, E. H............Rochester
Rysgaard, G. M............Northfield

St. Cyr, H. M., Jr.......Robbinsdale
St. Cyr, K. J.............Robbinsdale
Sach-Rowitz, Alvan......Moose Lake
Sadler, W. P., Jr.........Minneapolis
Saffert, C. A..................New Ulm
Sahr, W. G.................Hutchinson
Saidy, J. T.........San Mateo, Calif.
Salassa, R. M................Rochester
Saliterman, B. I..........Minneapolis
† Salk, R. J.................Sauk Rapids
Salter, R. A......................Virginia
Samuelson, L. G...............Mankato
Samuelson, Samuel.......Minneapolis
Sandeen, R. M..................Buffalo
Sandell, S. T..................Nopeming
Sanderson, A. G..................Anoka
Sanderson, D. J.........Fergus Falls
Sandt, K. E................Minneapolis
Sandven, N. O............Paynesville
† Sanford, A. H................Rochester
† Sanford, J. A.....................Savage
Sanford, J. B.....Battle Creek, Mich.
Sanford, R. A............Minneapolis
Sarff, O. E........................Duluth
Sargent, E. C., Jr..............Austin
Sarnecki, M. M...........Saint Paul
† Satersmoen, Theodore..Pelican Rapids
Sather, E. L....................Fosston
Sather, E. R..............Alexandria
Sather, G. A....................Fosston
Sather, R. N....................Fosston
Sather, R. O..................Crookston
Saterlee, H. W................Lewiston
† Satterlund, V. L............Saint Paul
Saunders, B. H., Jr........Rochester
Saur, Wm. G.................Rochester
† Savage, F. J..................Saint Paul
Sawtell, Robert R...............Jeffers
Sawatzky, W. A.........Minneapolis
Sax, M. H..........................Duluth
Sax, S. G...........................Duluth
Saxman, Gertrude O......Georgetown
Sayre, G. P....................Rochester
Sborov, A. M.....Ft. McClellan, Ala.
Scanlon, P. W...............Rochester
Schaaf, F. H. K.........Minneapolis
† Schaar, Frances E........Minneapolis
Schade, F. L...............Worthington
Schaefer, J. F................Owatonna
Schaefer, W. G...........Minneapolis
Schamber, W. F......Parkers Prairie
Schatz, F. J................Saint Cloud
‡ Scheidel, A. McK....Des Moines, Ia.
Scheifley, C. H..............Rochester
† Scheldrup, N. H.........Minneapolis
Scherer, L. R..............Minneapolis
Scherling, S. S...........Minneapolis
Scherman, O..................Rochester
Schiele, B. C...............Minneapolis
Schimelpfenig, G. T...........Chaska
Schirber, M. J..........Grand Rapids
Schlesselman, G. H.......Minneapolis
Schmid, J. F.......................Duluth
Schmidt, G. F............Minneapolis
Schmidt, H. W...............Rochester
Schmidt, H. R....................Winona
† Schmidt, P. A.............Aurora, Ill.
Schmidt, P. G., Jr.......Granite Falls
Schmidt, R. F......................Alden
Schmidt, W. R...........Minneapolis
Schmidtke, R. L............Saint Paul

† Schmitt, S. C.........El Cajon, Calif.
Schmitz, A. A..................Mankato
Schneck, Jack I......Waukesha, Wis.
† Schmitz, Everett J.....Seattle, Wash.
Schmitz, G. P..............Little Falls
Schneider, L. E..................Duluth
Schneider, P. J..................Adams
† Schneider, Robert A.....N. Y., N. Y.
Schnell, F. S.................Litchfield
Schnugg, Francis J.........Rochester
Schoch, R. B. J............Saint Paul
Schoeneberger, P. B..........Perham
† Scholpp, O. W...........Hutchinson
Scholz, D. A..................Rochester
Schons, Edward............Saint Paul
Schottler, M. E...........Minneapolis
† Schroeder, C. H.......Pottstown, Pa.
Schroeckenstein, H. F......Saint Paul
Schroeder, A. J..........Minneapolis
Schroeppel, J. E............Winthrop
† Schuldt, F. C...............Saint Paul
† Schultz, J. A...............Albert Lea
Schultz, J. H.............Minneapolis
Schultz, P. J..............Minneapolis
† Schulze, A. G..............Saint Paul
Schulze, W. M...........Minneapolis
Schumacker, J. W........Robbinsdale
Schut, J. W.......................Anoka
Schutz, E. S..........Mountain Lake
Schutz, John C..........Eden Valley
Schwartz, E. R...........Minneapolis
Schwartz, V. J...........Minneapolis
† Schwarz, Bert E...........Rochester
Schweiger, T. R..................Hibbing
Schweinfurth, J. D........Rochester
Schweinfurth, J. P....Wichita, Kan.
‡ Schwyzer; Arnold....Ah-Gwah-Ching
Schwyzer, Marguerite....Saint Paul
Schwyzer, H. C............Saint Paul
Scott, E. E...................Saint Paul
Scott, H. G................Minneapolis
Scudamore, H. H...........Rochester
§ Seaberg, John A..........Minneapolis
Seagle, J. B.....................Rochester
Seashore, R. T.....................Duluth
Seery, T. M.........................Austin
† Segal, M. A................Minneapolis
Seham, Max.................Minneapolis
Seifert, M. H...................Excelsior
Seifert, O. J.....................New Ulm
Seitz, S. B.....................Barnesville
Sekhon, M. S...............Saint Paul
Seldon, T. H...................Rochester
Seljeskog, S. R...........Minneapolis
* Sellers, G. K........................Dassel
Sells, Richard S...........Saint Paul
Selmo, J. D......................Norwood
Semsch, R. D..............Minneapolis
† Senkler, G. E...............Saint Paul
† Senn, E. W....................Owatonna
Sether, A. F......................Ruthton
Setzer, H. J...................Saint Paul
Shandorf, J. F............Minneapolis
Shannon, W. R............Saint Paul
Shaperman, Eva P........Minneapolis
Shapiro, S. K............Minneapolis
Shaver, Ward...........Fergus Falls
Shaw, H. A................Minneapolis
Shea, Andrew W.........Minneapolis
Sheedy, C. L......................Austin
† Shellman, J. L...Pacific Palisades, Cal.
Sheppard, C. G............Hutchinson
Sher, D. A......................Virginia
Sher, Lewis ....Minneapolis
Sherman, A. G..............Albert Lea
Sherman, C. H..................Bayport
Sherman, C. L..................Luverne
Sherman, L. F............Minneapolis
Sherman, R. V..............Red Wing
† Sherwood, G. E.................Kimball
Shick, R. M....................Rochester
Shocket, Everett ....Rochester
Sholl, P. R.....................Rochester
Short, Jacob..................Saint Paul
Shronts, J. F..............Minneapolis
Siegel, Clarence...........Saint Paul
Siegel, J. S......................Virginia
‡ Siegel, S. C...................Saint Paul
Siegmann, W. C..........Minneapolis
Siekert, R. G..................Rochester
Sikkema, Stella H........Minneapolis
† Silver, Arthur W...........Rochester
Silver, J. D................Minneapolis
Simison, Carl...............Barnesville
Simon, Howard B...........Rochester
Simon, T. R.................Saint Cloud
Simons, B. H....................Chaska
Simons, E. J..................Saint Paul
† Simons, J. H..............Minneapolis
Simons, L. T.................Saint Paul
Simmons, W. H.............Rochester
Simonson, D. B..........Minneapolis
Simonton, K. MacL..........Rochester
† Simpson, E. D...........Minneapolis

Sinamark, Andrew..........Hibbing
Singer, B. J...............Saint Paul
Sinykin, M. B..........Minneapolis
Siperstein, D. M.........Minneapolis
Sisk, H. E...............Saint Cloud
Sisler, C. E...........Grand Rapids
† Sivertsen, Andrew........Minneapolis
† Sivertsen, Ivar..........Minneapolis
Sjoding, J. D...............Mankato
Sjostrom, L. E............Saint Peter
Skaife, William F........Little Falls
Skaug, H. M..............Rochester
Skinner, Abbott...........Saint Paul
† Skinner, H. O............Saint Paul
Skjold, A. C............Minneapolis
Skogerboe, R. B............Karlstad
Slater, S. A.............Worthington
Slocumb, C. H.............Rochester
Smiley, J. T............Minneapolis
Smisek, E. A............Saint Paul
Smisek, F. M. E.........Minneapolis
Smith, Adam M.........Minneapolis
Smith, Archie M.........Minneapolis
Smith, B. A., Jr.........Minneapolis
† Smith, Ballard F..........Rochester
Smith, C. F...............Rochester
Smith, C. M..................Duluth
Smith, Clyde..............Saint Paul
Smith, D. V.............Blue Earth
† Smith, Fredk. L...........Rochester
‡ Smith, George R..........Hutchinson
Smith, Graham G.........Minneapolis
Smith, Harry..........Lake Crystal
Smith, H. L...............Rochester
† Smith, H. R............Minneapolis
Smith, Leon G...........Montevideo
Smith, Lloyd A..................Tyler
Smith, Lucian A...........Rochester
‡ Smith, M. P...............Rochester
† Smith, Margaret I........Robbinsdale
Smith, Marie A.........Minneapolis
† Smith, Myron W..........Red Wing
Smith, N. R............Minneapolis
Smith, Newton W..........Rochester
Smith, Paul M.........Lake Crystal
Smith, T. S............Minneapolis
Smith, V. D. E...........Saint Paul
Smith, W. R...........Grand Marais
Smith, Wm. T...........Minneapolis
Smorszczok, Mitrofan......Monticello
Smyth, J. J............Lester Prairie
Snyder, C. D.................Kiester
Snyder, G. W.............Saint Paul
Snyker, O. E.....................Ely
Soderlind, R. T..........Minneapolis
Sogge, L. L.................Windom
Sohlberg O. I............Saint Paul
† Sohmer, A. E. J.............Mankato
Solhaug, S. B...........Minneapolis
Solsem, F. N. S...............Spicer
Solvason, H. M..........Minneapolis
Sommers, Ben............Saint Paul
Sonnesyn, N. N.............Le Sueur
Sorem, M. B..............Saint Paul
Sorum, F. T...................Jasper
Soucheray, P. H...........Saint Paul
Soule, E. H................Rochester
Souster, B. B.............Saint Paul
Sowada, E. J..............Saint Paul
Spain, W. Thomas..............
New Brunwick, N. Y.
Spang, A. J..................Duluth
Spang, J. S..................Duluth
Spang, William M............Duluth
Spano, J. P.............Minneapolis
‡ Spear, H. C..........Houston, Texas
Spink, W. W............Minneapolis
Sponsel, Kenath..........Minneapolis
† Sprafka, J. L..............Saint Paul
Sprafka, J. M..............Saint Paul
† Spratt, C. N.............Minneapolis
Spurzem, R. J.................Anoka
Stadem, C. J............Twin Valley
Stahler, P. A.................Jordan
Stahn, Louis H................Anoka
Stahr, A. C.................Hopkins
Stam, John ....Worthington
Stanford, C. E..........Minneapolis
Stanley, C. R...........Worthington
Starekow, M. D.....Thief River Falls
‡ State, David...........Phoenix, Ariz.
‡ Staub, H. P............Minneapolis
Stauffer, Maurice H........Rochester
Steffens, L. A.............Red Wing
Stein, R. J.....................Pierz
Steinberg, C. L...........Saint Paul
Steiner, I. W..................Winona
Steiner, L. E..............Albert Lea
Steinhilber, R. M...........Rochester
Stelter, L. A............Minneapolis
Stemsrud, H. L...........Alexandria
‡ Stennes, J. L............Minneapolis
Sterner, D. C.............Saint Paul
† Sterner. E. G.............Saint Paul

Sterner, E. R.............Saint Paul
Sterner, J. J..............Saint Paul
Sterrie, Normana ....Worthington
† Stevens, Grant M...........Rochester
Stevenson, B. M................Fulda
Stevenson, F. W............Faribault
Stewart, Alexander........Saint Paul
Stewart, D. E.............Crookston
Stewart, M. J...........Minneapolis
Stewart, R. I............Minneapolis
Stickney, J. M............Rochester
† Stiegler, F. S.............Saint Paul
Stillwell, G. K..........Minneapolis
Stillwell, W. C..............Mankato
Stilwell, G. G..............Rochester
Stoeckmann, Arthur E......St. Peter
Stoesser, A. V..........Minneapolis
Stolpestad, A. H...........Saint Paul
Stolpestad. H. L...........Saint Paul
Stoltz, Robert G.........Minneapolis
† Stomel, Joseph....Los Angeles, Calif.
‡ Stone, N. F.............Chicago, Ill.
Stone, S. P.............Minneapolis
Storsteen, K. A...........Rochester
Stoy. R. A..............Little Falls
† Strachauer, A. C.........Minneapolis
‡ Strandiord. N. M.......N. Y., N. Y.
Stransky, T. W............Owatonna
Strate, G. E...............Saint Paul
Strathern, C. S...........Saint Peter
† Strathern, F. P...........Saint Peter
† Strathern, M. L..............Gilhert
Stratte, A. K..............Pine City
Stratte, H. C...............Windom
Straus, M. L..............Saint Paul
Strauss, E. C.................Duluth
Street, Bernard...........Northfield
Strem, E. L...............Saint Paul
Strewler, G. J................Duluth
Strickler, J. H..........Minneapolis
Strobel, W. G.................Duluth
Stroebel, C. F., Jr.........Rochester
Strom, G. W...........Minneapolis
Stromgren, D. T.........Minneapolis
Stromme. W. B.........Minneapolis
Strunk, C. A...........Minneapolis
† Struthers, Alfred M........Rochester
Studer, D. J................Faribault
Stuermer. Harry.........Minneapolis
‡ Stuhler, L. G..............Rochester
Stuhr, J. W...............Stillwater
‡ Sturges, Robert L........Minneapolis
Sturley, R. F.............Saint Paul
† Suhby, Walter ....Minneapolis
Sukov, Marvin ....Minneapolis
Sutherland, H. N.................Ely
Sutherland, W. H............Benson
Sutton, H. R................Hoffman
Svien, H. J................Rochester
Swain, F. M..............Saint Paul
Swanson, J. A............Saint Paul
‡ Swanson, L. J.......West Saint Paul
Swanson, R. E..........Minneapolis
Swedberg, W. A..............Duluth
Swedenburg, P. A..........Glenwood
Sweetser, H. B..........Minneapolis
Sweetser, T. H..........Minneapolis
† Sweitzer, S. E..........Minneapolis
† Swendseen, C. G.........Minneapolis
Swendson, I. J............Saint Paul
Swensen, R. G........North Branch
Swenson, A. O...............Duluth
† Swenson, Donald B.........St. Paul
Swenson, O. J................Waseca
Symmonds. Richard E.......Rochester
Syverton, Jerome ....Minneapolis

Tangen, G. M...........Minneapolis
Tanquist, Edwin J.........Alexandria
† Tarantino, Jos. C..........Rochester
† Taub, Robert G............Rochester
Taylor, D. E........San Diego, Calif.
Taylor, Edwin A...........Rochester
Taylor, Gloria A.....San Diego, Calif.
Taylor, J. H............Minneapolis
Taylor, L. M..............Rochester
Teich. K. W..................Duluth
Teisberg. J. E............Saint Paul
Tenner, R. J............Minneapolis
Terrell, B. J...............Nopeming
‡ Terry, W. S..............Saint Paul
Tesch, G. H...............Elk River
‡ Tetlie, J. P.......Camp Carson, Colo.
† Thabes, J. A., Sr...........Brainerd
Thabes, J. A., Jr...........Brainerd
Thayer, E. A...............Fairmont
‡ Thelen, E. P...........Bethesda, Md.
Thielen, R. D.........Saint Michael
Thiem, Chester E...........Hibbing
† Thomas, G. E...........Minneapolis
Thomas, W. H..........Howard Lake
Thomes, A. B...........Minneapolis
Thompson, C. O...........Hendricks
Thompson, F. A..........Saint Paul

Thompson, G. J............Rochester
Thompson, H. B..........Saint Cloud
Thompson, O. H., Jr........Rochester
Thompson, W. H........Minneapolis
Thomson, J. M...............Austin
Thoreson, M. C. Bernice.........
South Saint Paul
Thorsen, D. S...........Minneapolis
Thorson, S. V...........Minneapolis
Thysell, Desmond M......Minneapolis
† Thysell, Fred A...........Moorhead
Thysell, Harold ....Crookston
Thysell, V. D................Hawley
Tichey, Fae Y..........Minneapolis
Tifft, C. R................Saint Paul
‡ Tihen, E. N....Camp Stoneman, Calif.
Tillisch, J. H..............Rochester
† Tingdale, A. C..........Minneapolis
Tingdale, Carlyle ....Hibbing
Tinkham, R. G..........Minneapolis
Titrud, L. A............Minneapolis
Tobin, John D..........Minneapolis
‡ Todd, John W.............Rochester
Todd, Romona L.........Minneapolis
Tomhave, W. G.............Hibbing
Tompkins, R. G...........Rochester
Tongen, Lyle A...........Saint Paul
Tosseland, N. E..............Duluth
Trach, B. B............Minneapolis
Tracht, R. R..............Saint Paul
Traeger, Carl A............Faribault
Travis, James S..........Saint Paul
Traxler, J. F.............Henderson
Tregilgas, H. R.....South Saint Paul
Troost, H. B................Mankato
Trow, James E.........Minneapolis
Trow, Wm. H..........Minneapolis
Trueman, H. S.........Minneapolis
Truesdale, C. W............Glencoe
† Tuerk, Milton.............Rochester
Tudor, R. B............Minneapolis
† Tunstead, H. J.........Minneapolis
Tuohy, E. L..................Duluth
Turbak, C. E..................Canby
† Turnacliff, D. D..........Saint Paul
*†Tweedy, Geo. J.............Winona
Tweedy, J. A................Winona
Twiggs, L. F..................Austin
† Twomey, J. E...........Minneapolis

Ude, Walter H..........Minneapolis
Uhley, C. G...............Crookston
Uihlein, Alfred ....Rochester
† Ulrich, Henry L.........Minneapolis
† Ulery, Richard M...........Rochester
Ulvestad, H. S..........Minneapolis
Undine, C. A...........Minneapolis
Urberg, S. E.................Duluth
† Utne, J. R................Northfield
† Utz, David C.............Rochester

Vadheim, A. L..................Tyler
† Valentine, W. H................Tracy
Van Bergen, F. H........Minneapolis
Van Cleve, H. P., Jr.........Austin.
Vandersluis, C. W...........Bemidji
Van Herik, Martin.........Rochester
Van Meier, Henry.........Stillwater
Van Rooy, G. T.....Thief River Falls
Van Ryzin, D. J.............Duluth
‡ Van Valkenberg, J. D..........
New York, N. Y.
Van Fleet, Mary E.........Rochester
Varco, R. L..............Saint Paul
Vaughan, V. M..............Truman
‡ Vaughn, C. G..................
Ft. Leonard Wood, Mo.
Vaughn. L. D..............Rochester
Veirs, D. M...............Saint Paul
Veirs, Ruby J. S..........Saint Paul
Venables, A. E............Saint Paul
Veranth. L. A............Saint Cloud
‡ Verby, J. E., Jr............Litchfield
Vezina, J. C...............Mapleton
Vik, Arthur E..........Minneapolis
Vik, Melvin...................Omaha
Virnig, Hildegard J.........Rochester
Virnig, Mark P.................Wells
Virnig, Richard P..............Wells
Vogel, H. A. L............New Ulm
Vollmer, F. J................Winona
Von Drasek, J..............Mankato

Waas, C. W..............Saint Paul
* Wadd, C. T................Janesville
Wagener, H. P.............Rochester
Wagoner, James M.........Harmony
Wagner, N. W.............Graceville
Wahlquist, H. F..........Minneapolis
Wakefield. E. G...........Rochester
† Wakim, K. G.............Rochester
Walder, H. J.................Duluth
Waldron, C. W..........Minneapolis
Walfred, K. A...........Saint Cloud

† Walker, A. E.................Duluth
Walker, Arthur E.........Saint Paul
Wall, C. R...............Minneapolis
Wallace, M. O.................Duluth
† Waller, J. D...............Pine City
Walsh, Edw. F...........Saint Paul
Walsh, F. M.............Minneapolis
Walsh, W. T.............Minneapolis
Walter, C. Wm...........Saint Paul
Walter, F. H......International Falls
Walters, Waltman..........Rochester
Wandke, O. E..............Fairmont
‡ Wang, Jun-Chuan .... Ft. Sam Houston, Tex.
Wangensteen, O. H.......Minneapolis
‡ Ward, Bert B..............Rochester
Ward, Louis E.............Rochester
Ward, Percy A..........Minneapolis
† Ward, Peter D...........Saint Paul
Warner, James J..............Perham
Warren, C. A.............Saint Paul
Wasmund, C. W...........Red Wing
Wasson, L. F.............Alexandria
Watkins, C. H.............Rochester
§ Watkins, I. A...............Windom
Watson, A. M...............Royalton
Watson, C. G...........Minneapolis
Watson, C. J...........Minneapolis
Watson, Eleanor J..........Rochester
‡ Watson, J. R...............Rochester
Watson, P. Theo..........Saint Paul
Watson, Percy T...........Northfield
Watson, R. M.................Morris
Watson, S. Wm..............Royalton
Watson, Wm. H. A........Saint Paul
Watson, Wm. J..............Newport
Watz, C. E.................Saint Paul
‡ Waud, R. E.........Fort Ora, Calif.
Waugh, J. M...............Rochester
† Weaver, M. M.................. Vancouver, B. C., Canada
Weaver, P. H...............Faribault
Webb, E. A..............Minneapolis
Webb, James H............Rochester
Webb, R. C..............Minneapolis
Webber, F. L.............Saint Paul
Webber, R. J................Hopkins
Weber, Harry ....Rochester
Wober, Lowell...........Minneapolis
Weed, L. A................Rochester
‡ Wehr, M. B......Long Island, N. Y.
Weir, J. F.................Rochester
Weis, B. A................Saint Paul
Weisberg, Maurice........Saint Paul
Weisberg, R. J..........Minneapolis
Weiss, Carl A................Hastings
Welch, J. S................Rochester
Wellborn, W. H............Rochester
Wellman, T. G...........Clinton, Ia.
Wellman, Wm. E...........Rochester
Wellner, T. O..............Rochester
Welles, H. J.............Minneapolis
Wells, A. H...................Duluth
Wells, W. B..................Jackson
Wendland, J. P..........Minneapolis
Wente, H. A...............Rochester
† Wentworth, A. J............Mankato
Wentzler, James D..Montoursville, Pa.
Wenzel, G. P..............Saint Paul

† Werner, George ....Minneapolis
Weslowski, S. P...........Saint Paul
† West, Catherine C.......Minneapolis
Westby, Magnus ....Madison
Westby, N. M................Madison
† Westerman, A. E........Montgomery
Westerman, F. C.........Montgomery
Westover, D. E............Saint Paul
Westrup, J. E.............Lanesboro
† Wethall, A. G............Minneapolis
Wetherby, M. ....Minneapolis
† Wetzel, E. V..............Saint Paul
‡ Weyhrauch, R. A......Phoenix, Ariz.
Wheeler, D. W................Duluth
Wheeler, G. S.................Roseau
† Wheeler, M. W...........Lake Elmo
Wheeler, R. W..........Minneapolis
White, Asher A.........Minneapolis
White, S. Marx.........Minneapolis
† White, Roy A......New Orleans, La.
White, W. D............Minneapolis
Whitesell, L. A..........Minneapolis
Whitson, S. A............Albert Lea
Whittemore, D. D............Bemidji
Widen, W. F............Minneapolis
Wierman, Wm. H............Rochester
Wikoff, H. M..............Crookston
† Wilcox, A. E............Minneapolis
Wilcox, G. C................St. Peter
† Wilder, K. W............Minneapolis
Wilder. R. L.............Minneapolis
† Wilder, Russell M......Bethesda, Md.
Wilder, R. M., Jr........Minneapolis
Wilken, P. A............Minneapolis
† Wilkinson, George R., Jr....Rochester
† Wilkinson, Stella L..........Newport
Wilkowske, R. J...........Owatonna
Will, C. B....................Bertha
Will, W. W...................Bertha
† Willcutt, C. E.........Phoenix, Ariz.
† Williams, A. B............Saint Paul
Williams, B. F. P.............Duluth
Williams, Chas. ....Pipestone
Williams, C. K............Saint Paul
Williams, George E.........Rochester
Williams, Henry L., Jr.....Rochester
Williams, H. O..........Lake Crystal
Williams, J. A............Saint Paul
† Williams, L. A...........Minneapolis
‡ Williams, L. B..............Germany
Williams, M. M.......Ah-Gwah-Ching
Williams, M. R.........Cannon Falls
† Williams, R. V.............Rushford
† Williams, Robert ....Duluth
Williamson, H. A........Heron Lake
Willius, F. A...............Rochester
Wilmot, C. A...............Litchfield
Wilmot, H. E...............Litchfield
Wilson, C. E.............Blue Earth
Wilson, F. C...................Austin
Wilson, J. A.................St. Paul
Wilson, J. V..............Saint Paul
‡ Wilson, Louis J.............Winona
Wilson, R. B..............Rochester
Wilson, R. H............Minneapolis
‡ Wilson, T. W............Great Lakes
Wilson, V. O..............Rochester
Wilson, W. E.............Northfield
† Wilson, Wm. F............Lake City
† Wiltrout, I. G....................Oslo

Winchell, Paul...........Minneapolis
‡ Wineland, R. E............New York
Wingquist, C. G..............Crosby
‡ Winkelmann, Richard K....Rochester
† Winnick, J. B.............Saint Paul
Winter, J. A..................Duluth
Winterringer, J. R..........Rochester
Winther, Nora M. C.....Minneapolis
Wipperman, F. F.........Minneapolis
† Wise, Fred E., Jr..........Rochester
Wisness, O. A..............Comfrey
Witham, C. A...........Minneapolis
† Wittchow, A. W............Rochester
Wittich, F. W...........Minneapolis
Wittrock, L. H..............Watkins
Wohlrabe, A. A..........Minneapolis
Wohlrabe, A. C.........Minneapolis
Wohlrabe, C. F.........No. Mankato
Wohlrabe, E. J...........Springfield
* Wold, Karl C.............Saint Paul
Wolf, A. H..............Minneapolis
Wolff, Helen B.......Hamden, Conn.
Wolff, H. J...............Saint Paul
Wolff, John M.............Rochester
Wolkoff, H. J.............Saint Paul
Wollaeger, Eric...........Rochester
Wolstan, S. D..............Minneota
Wolter, Frederick H......Minneapolis
Woltjen, M. J..............Rushford
Woltman, H. M. F.........Rochester
† Wood, Harry G............Rochester
Woolner, L. B.............Rochester
Word, H. L...............Saint Paul
Workman, W. G...............Tracy
† Wray, Wm. E...........Fergus Falls
Wright, R. R..................Austin
Wright, S. M..............Rochester
Wright, T. D............Minneapolis
Wright, W. S............Minneapolis
Wright, Wm. S...........Minneapolis
‡ Wuest, John H., Jr.........Rochester
Wurdemann, Alma L............ White Bear Lake
Wyatt, O. S..............Minneapolis
Wynne, H. M. N.........Minneapolis

Yaeger, W. W..............Marshall
† Ylitalo, W. H..............Rochester
Ylvisaker, R. S...........Minneapolis
Yoerg, O. W.............Minneapolis
Young, H. H...............Rochester
Young, T. O.................Duluth
Younger, L. I.................Winona
Youngren, E. R...........Saint Paul

Zachman, A. H..............Melrose
Zachman, L. L............Saint Paul
Zahrendt, O. Lewis.......Minneapolis
Zaworski, L. A...........Minneapolis
Zeigler, C. M.............Pine River
‡ Zeller, W. W........Philadelphia, Pa.
Zemke, E. E.................Fairmont
Ziegler, Robert G............Welcome
Zierold, A. A............Minneapolis
Zimmerman, H. B.........Saint Paul
Zinter, F. A.............Minneapolis
Ziskin, Thos. ....Minneapolis
‡ Zupanc, Edward............... San Francisco, Calif.

Minnesota Academy of Medicine

Meeting of November 12, 1952

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, November 12, 1952. Dinner was served at 7 o'clock and the meeting was called to order at 8:10 p.m. by the President, Dr. O. H. Wangensteen.

There were fifty-six members and five guests present.

Minutes of the October meeting were read and approved.

The Secretary reported that the Executive Committee, at the request of the applicant, had approved the transfer of the name of Dr. Arthur Ide, from the Active to the Senior Membership list. Upon ballot, this was approved by the members present.

Upon ballot, the following men were elected as candidates for membership in the Academy:

Minneapolis	Dr. Ejvind Fenger
Saint Paul	Dr. Lawrence Hilger
	Dr. Burtis Mears
	Dr. Ben Sommers
Austin	Dr. David P. Anderson
Red Wing	Dr. Ray Hedin

The scientific program followed.

Dr. C. W. Lillehei, University of Minnesota, by invitation, gave the paper of the evening, entitled "The Effect of Left to Right Circulatory Shunts upon Susceptibility to Infection."

The meeting was adjourned.

Wallace P. Ritchie, M.D., *Secretary*

Meeting of December 10, 1952

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, December 10, 1952. The dinner was served at 7 o'clock and the meeting was called to order at 8:10 p.m. by the President, Dr. O. H. Wangensteen.

There were fifty-five members and two guests present.

Minutes of the November meeting were read and approved.

Dr. Wangensteen said he felt some sort of commendation to Dr. Wallace Ritchie as Secretary, was in order, and he also wanted to thank Dr. Thomas Lowry for the fine work he had done as Chairman of the Program Committee.

The following members were elected as Officers for the year 1953.

President	Dr. E. A. Regnier, Minneapolis
Vice President	Dr. Charles N. Hensel, St. Paul
Sec'y-Treasurer	Dr. Robert E. Priest, Minneapolis

The scientific program followed.

Dr. Wendell Hall, University of Minnesota, by invitation, gave a talk on "Human Brucellosis in Minnesota." *(See Page 460)*

DISCUSSION

Dr. Wesley W. Spink, Minneapolis: I suppose that in the past many papers of historical interest and importance have been presented before this Academy, and the one that Dr. Hall has presented tonight should be included in this category. I doubt whether many individuals in this country can bring together thirty-five well-studied, bacteriologic-proved cases of human brucellosis. It takes a long time to accumulate such an experience. Over a period of fifteen years, my associates and I, including Dr. Hall, have studied 110 culturally proved cases. This does not include an equal number of cases with undoubted brucellosis having epidemiologic, clinical and serologic evidence of active disease. All these active cases have been screened from several hundred cases of suspected brucellosis.

There are several aspects of this disease that are of historical interest, as far as the state of Minnesota is concerned, and one in particular that relates to the University of Minnesota. Minnesota has long been a leader in the efforts to eradicate brucellosis from farm animals. Participants in this activity have included individuals in the Division of Veterinary Science in the University, such as the late Dr. C. P. Fitch, Dr. W. L. Boyd, Dr. H. C. Kernkamp and Dr. M. Roepke; members of the Laboratories of the State Board of Health, such as Dr. O. McDaniel, Dr. L. Heathman Barr, Dr. D. Fleming and Dr. H. Bauer; Dr. Randolph West of the Minnesota Livestock Sanitary Board, and Dr. Fred Driver of the Bureau of Animal Industry in the U. S. Department of Agriculture.

Although Bang had established the etiology of contagious abortion in cattle in 1897, and Bruce had isolated the causative agent of Malta fever from humans in 1887, the first human case due to *Br. abortus* was not established until 1924. But a former Professor at the University of Minnesota came very near establishing the fact that human beings could contract brucellosis from cattle a decade before this was proved. A young bacteriologist trained in serologic techniques in Copenhagen became interested in the complement-fixation test for brucellosis, and in 1912 published a paper from the University of Wisconsin showing that of 76 head of cattle, 30 had serologic evidence of brucellosis. Furthermore, he isolated *Br. abortus* from bovine fetal material, the second man in the United States to do so up to that time. That man was Dr. Winfred Larson, late Professor and Chairman of the Department of Bacteriology at the University of Minnesota. Dr. Larson moved on to Minnesota from Wisconsin and in 1913, he published another significant paper with Dr. J. P. Sedgwick, Chairman of the Department of Pediatrics. He demonstrated complement-fixing antibodies and agglutinins for brucella in 17 per cent of the sera from over 400 infants and children. In the discussion of their paper they postulated about the significance of these brucella antibodies, but they did not take the final step and attempt the isolation of brucella organisms from human beings. They concluded, though, that further investigations were necessary.

The impetus for the control and eradication of animal brucellosis in Minnesota has stemmed from two fundamental facts. First, the disease is an economic liability to the farmer and to the livestock breeder because it causes abortions and because a diseased cow is a poor milk producer. Second, these animals are the reservoir for the human disease.

Prior to World War II, efforts in Minnesota to eradicate bovine brucellosis were attended with considerable success. If the work had progressed uninterrupted, by today brucellosis would be much less of a problem. But due to the war, activities centering around a control program abated, and there was an associated increase in the incidence of animal and human brucellosis. But since the conclusion of World War II the eradication program in Minnesota is underway again, and other states are also engaging in aggressive programs. These increased efforts in other states are due to two recent developments. One relates to the announcement of the Chicago Board of Health that after January 1, 1955, all milk and milk products sold in that city for human consumption shall come from herds of cattle free from Bang's disease. This edict struck particularly hard at Wisconsin, where the dairy industry is the backbone of the state's economy. The State Legislature became interested, and appropriated a large sum of money to investigate the disease in cattle. Recent figures indicate that about 30 per cent of the herds of cattle in Wisconsin have animals with Bang's disease. The other development that is speeding up eradication programs is the decision of the U. S. Public Health Service to revise the milk code so that all milk and milk products sold for human use shall originate from herds that are following either Plan A or Plan B eradication programs. Plan A calls for the serologic testing of all cattle in a herd, and then the slaughtering of all positive reactors. Plan B means the testing of cattle, but deferring slaughtering of the reactors, and vaccinating the calves with brucella antigen. Both plans are in effect in areas in Minnesota, and I am sure that the State Legislature will take an increased interest in the efforts of the farmers and livestock producers to eliminate this brucellosis. At the present time, only three states have been accredited as free of brucellosis—Maine, New Hampshire and North Carolina.

Minnesota has been a most progressive state in the efforts to eliminate brucellosis. The pattern of the program has been adopted by several other states. I believe that since World War II the incidence of the bovine brucellosis has dropped because the attack rate in human beings is declining. This decline is not entirely due to the compulsory state law requiring the pasteurization of all milk sold for human use.

Dr. Theodore Sweetser, Minneapolis: I think Dr. Spink or Dr. Hall might mention some of the aspects of the situation in Rochester or in that area. I think brucellosis has been part of the problem there in relation to the distribution of milk to other states.

Dr. Spink: In answer to Dr. Sweetser's question, I am simply saying—I do not know. I do not believe that the incidence of bovine brucellosis in Minnesota is as great as in Wisconsin. Iowa poses a considerable problem, because the disease there is most prevalent in swine, and most of the human cases are derived from this source. But Iowa is taking active steps to eliminate the disease in hogs.

Dr. Thomas Lowry, Minneapolis: Ten or twelve years ago brucellosis was a very fashionable diagnosis, so to speak. Many patients came in with lymphadenopathy which they themselves had noted and which had caused a diagnosis of brucellosis to be attached to them on quite uncertain grounds, without adequate culture studies. At that time a great deal was being done, at least in some parts of the country, with vaccine therapy. Immediately, therefore, the patient who was considered to have brucellosis was apt to be given vaccine and developed a low agglutination titer against brucella organisms.

The only point in referring to it at all is that in my experience that type of individual has practically dropped out of sight. The patient who develops such a false titer is rarely seen at present in this vicinity as compared with a few years ago. I think it is largely through the efforts of Dr. Spink and Dr. Hall, who have insisted on adequate bacteriologic data before any sort of treatment is given, that this change has come about.

Dr. E. T. Evans, Minneapolis: As mentioned, brucellosis may produce spondylitis. The first group is, of course, the acute spondylitic reaction. I think Dr. Wangensteen will recall a patient we saw fifteen or sixteen years ago at the University Hospital in which the acute process was present for several months and finally quieted down with a diagnosis made only on differential exclusion. A second group is the development of a chronic subacute spondylitis without significant changes in the early cases and with symptoms that again must be diagnosed by exclusion. The third group is the chronic spondylitis in which the diagnosis is made largely on history and the associated finding of the so-called "parrot-beak" changes in the region of the intervertebral space. These patients may be noted on routine x-rays, and the only history one can find is that in years past the patient had a period of considerable localized backache.

As to differential diagnosis, two serious problems present: First, acute osteomyelitis. This is not an osteomyelitis but rather an intervertebral space involvement with secondary osteitis producing the eventual "parrot-beak" finding. They are essentially intervertebral disc in nature with secondary localized osteitis or periostitis. The other groups that are difficult to differentiate are, of course, the tuberculous cases. Inasmuch as most of these patients are farmers, we frequently find a positive Mantoux test. Tuberculosis, however, is a more chronic disease, seldom associated with as much pain as is present in the acute spondylitis cases seen with brucellosis. Careful x-ray studies, the presence of a perivertebral abscess, or the localized finding of destructive osteitis within the body of the vertebra or adjacent to the intervertebral space in planograms, should clinch the diagnosis.

Now that we are hearing so much about acute disc prolapse, degenerative disc with acute symptoms and functional low back complaints, secondary to disc degeneration, I think it is well to remember that if you have an acute disc syndrome, brucellosis as a cause should not be overlooked. It is my understanding that at least two patients have been operated upon for acute disc lesions, which proved to be brucellosis.

Dr. Spink: The most common complication of brucellosis is spondylitis. In Minnesota, not more than 5 to 10 per cent of all the cases develop spondylitis. But in some Mediterranean areas that I have visited recently, more than half of the hospitalized patients have had this complication. It is quite dramatic what rest in bed and antibiotic therapy will do for these patients. Any patient, particularly a farmer, who has received a diagnosis of a slipped or herniated intervertebral disc, should be screened serologically for brucellosis.

Dr. Hall, closing: Dr. Hansen has asked about the eye symptoms in brucellosis. Three-fourths of the patients had headaches and these characteristically were frontal headaches referred to the occiput and down the back of the neck. There were no patients in this series who had any objective evidence of infection in the ears or eyes, and I do not recall any who had a history of eye disease. I can't recall seeing any patients in whom the disease was proved by cultures who had iritis or iridocyclitis; some with positive skin tests and low titers of agglutinins who had received brucella vaccine, had flare-ups of recurrent iritis. I certainly feel that iritis is uncommon in the disease and that probably brucellosis is a rare cause of the iridocyclitis.

Dr. Wangensteen asked about infection of the udder or mastitis. I am not a veterinarian but, as I understand it, Gargot or clinical mastitis in cows is usually streptococcal in origin and not caused by brucella. Mastitis is very uncommon in the human females with brucellosis.

I would like to say something else about the differentiation from tuberculosis. As far as spondylitis is concerned, brucella spondylitis treated with rest and chemotherapy is followed by improvement, which is more rapid than seen in Pott's disease. Furthermore, pulmonary lesions are rare in brucellosis and common in tuberculosis.

The meeting was adjourned.

Wallace P. Ritchie, M.D., *Secretary*

Meeting of January 14, 1953

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, January 14, 1953. Dinner was served at 7:00 p.m., and the meeting was called to order at 8:10 p.m. by Dr. Moses Barron who had been asked to preside, this being the annual meeting at which the address of the Retiring President is given.

There were forty-eight members and four guests present.

Dr. Barron announced the names of the past presidents who were present—Drs. H. L. Ulrich, J. E. Hynes, E. M. Jones, R. T. La Vake, C. B. Drake, James A. Johnson, H. B. Zimmermann, A. G. Schulze, E. M. Hammes, T. A. Peppard, William Hanson, W. H. Hengstler, and O. H. Wangensteen.

No business was transacted at this meeting.

Owen H. Wangensteen, University of Minnesota, gave his address as Retiring President, entitled "A Look Backward." (See page 471).

There was no discussion.

The meeting was adjourned.

Robert E. Priest, M.D.

WHO IS THE "POWERFUL AMA LOBBY"?

You are, Doctor. This fact was brought out in a recent talk in Pittsburgh by Dr. Frank Wilson, director of the American Medical Association office in Washington. The function of this office is frequently misunderstood, even by members of the medical profession. As a matter of fact, the AMA has only two registered lobbyists in Washington—Dr. Wilson and one of his associates. They are registered only for protection of the AMA, and not because of the amount of lobbying they do.

The Washington office of the AMA is best considered as an information center, both for members of the profession and for members of Congress and government agencies. It was first established in 1943, after necessary legislation was passed by the House of Delegates of the AMA. At present, it has a staff of fifteen, including three physicians, two editors, a lawyer, a business manager and his assistant, and an executive assistant. It certainly doesn't sound like the huge "pressure group" that some columnists write about, does it?

It publishes three different types of newsletters. The first and basic publication is *The Bulletin.* This lists by number and name all legislation introduced into Congress that has medical significance. In addition, a brief abstract of the bill is given, but there is no editorializing. In other words, the official attitude of the AMA toward that specific piece of legislation is not given. The Bulletin is factual information and nothing else.

The second publication is *Capitol Clinics,* which is an informal newsletter on happenings in Federal agencies that would be of interest to the medical profession. The third publication is *Special Bulletins,* which is published more irregularly, and gives factual reports on specific agencies or policies. After the *Special Bulletins* is prepared and before it is published, the Washington office has it checked by the head of the agency or policy committee to make sure that the facts are correct.

Now, about this lobby system. Dr. Wilson and his associates never tell a senator or congressman how to vote. Their function is merely to inform the legislators on health problems. For example, a bill may be introduced on the subject of multiple sclerosis. Probably Senator Bloop from Siwash Falls, Idaho, has never even heard of the disease, let alone know what his attitude should be toward this piece of legislation. So he would call the Washington office and ask for information on "this multiple whatchamacallit," and be given a definition in lay terms together with some facts on the incidence, methods of treatment, and any other pertinent information. With this, he can form some intelligent attitude and decide whether he will be for it or against it. Argument for and against medical legislation is presented to congressmen, but under no circumstances is pressure applied.

The "pressure" is applied by the average physician at home, which means you, Doctor. When you write, wire, or call your congressman, you are making your wants known to him as far as medical legislation is concerned. A good representative in Washington desires these letters or telegrams because they let him know how the people at home feel about a particular bill. Congressmen respect the opinion of physicians in spite of the fact that as a group they are number poor in voting strength. Our representatives respect the influence of physicians in the community, and they will listen to you if your arguments are sound and your attitude is reasonable. If you want information about a piece of legislation before you write your senator or representative, the Washington office of the AMA will be happy to send it to you also as one of their services.

How much does it cost to run the Washington office? Hold onto your hats, because the "huge slush fund of the AMA lobby" amounts to 3 per cent of the budget of the American Medical Association, or about $200,000 annually. If you figure 15 salaries, office expenses, the cost of printing and paper, and miscellaneous items of overhead, there certainly isn't enough left to influence congressmen on one piece of legislation, let alone the dozens of bills presented annually.

So the next time one of your friends sounds off on the AMA lobby, here are a few facts you can hand him hot off the griddle. You, Doctor, are the American Medical Association and all its component parts.—*Bulletin of Allegheny County Medical Society.*

◆ Reports and Announcements ◆

FAMILY DOCTORS' DAY

The second Family Doctors' Day will be held on Wednesday, June 3, at the University of Minnesota Hospitals. Once again, an informal program, featuring topics of general interest, has been planned. All physicians are cordially invited to attend this program which will be presented by the Department of Surgery. The day's activities will include the following:

11:00 a.m.	Clinical-Pathological Conference; Todd Amphitheater, University Hospitals
12:00 noon	Luncheon with Department of Surgery Staff; Powell Hall Recreation Lounge
2:00 p.m.	Conference on Common Problems in General Surgery; Heart Hospital Theater, University Hospitals

PHYSICIANS NEEDED FOR THE BUREAU OF INDIAN AFFAIRS

Doctors are needed for service in The Bureau of Indian Affairs on reservations west of the Mississippi and in Alaska. A limited number of positions in the Fish and Wildlife Service are located in The Pribilof Islands off the Alaskan mainland. Applicants for the position of Medical Officer must be graduates of medical schools of recognized standing and will receive compensation ranging from $5,940 to $10,800 depending on qualifications and experience. Forms may be obtained from the U. S. Civil Service regional office at the Post Office and Custom House Building in Saint Paul.

HEART DISEASE RESEARCH GRANTS

Grants and fellowships in the field of heart disease research totalling more than $810,000 have been announced by the Life Insurance Medical Research Fund, an organization of 145 U. S. and Canadian life insurance companies. The new awards raise to more than 5.5 million dollars the money which has been contributed to research by the Fund since it was organized late in 1945.

Today's awards include $664,386 in grants-in-aid to university hospitals and research centers and $139,925 which will be used in supporting forty scientific fellowships for young men and women. The grants-in-aid will make possible fifty-two individual investigations to be carried on in twenty-three states, three Canadian provinces, in Puerto Rico and in two other countries.

Established to support research which will help prolong life, the Life Insurance Medical Research Fund is the pioneer agency supporting research into diseases of the heart and arteries. These diseases are the number one health problem now existing in the country and account for more than half of all deaths. Support of research into heart disease as the sole activity of the Fund was decided upon at a conference of medical scientists held in New York City last June.

Since the Fund began operation it has supported 205 research programs and 241 research fellowships and its work has been carried on in ninety-eight different institutions. Numerous important additions to knowledge about heart disease have been made and many important leads will be investigated during the coming year directed to better methods of treating heart disease and obtaining more knowledge about how it may be controlled or prevented.

Two grants were made to further research in Minnesota. An award of $16,000 was made to the University of Minnesota Medical School for research by Dr. Ivan Baronofsky on problems of acquired heart disease from the standpoint of surgical treatment. The other grant was a postdoctoral research fellowship award which was made to Dr. Morley Cohen, of Minneapolis, for research under the guidance of Dr. C. Walton Lillehei of the University of Minnesota.

WALTER REED SOCIETY

At the Walter Reed Society meeting held April 8, in Chicago, the following officers were elected: Dr. Max S. Sadove, Head, Department of Anesthesia, University of Illinois, president; Dr. Charles F. Code, Professor of Physiology, Mayo Foundation, University of Minnesota; Dr. Clinton H. Thienes, Director, Huntington Memorial Hospital, Pasadena, California, and Dr. Y. T. Oester, Head of Pharmacology, Stritch Medical School, Loyola University, vice presidents, and Dr. Frances A. Hellebrandt, Director, Department of Physical Medicine and Rehabilitation, University of Illinois, secretary-treasurer.

The Walter Reed Society is comprised of individuals who have served as voluntary subjects for experimental research.

Woman's Auxiliary

BLUE EARTH COUNTY HOLDS RECRUITMENT TEA

Mrs. Alton E. Lindblom, President

The Woman's Auxiliary to the Blue Earth County Medical Society were hostesses to sophomore, junior and senior high school girls at a tea designed to interest them in nursing careers. The tea was held at the home of Mrs. Bradley Troost in Mankato, the first week in April.

Attendance was good, and two student nurses and one graduate nurse discussed nursing career advantages with the high school girls. Also, the Auxiliary sponsored a movie on nursing at the meeting.

The Blue Earth County Auxiliary has also been very active throughout the year, carrying on many important auxiliary programs in the community.

In Memoriam

ADOLPH H. AHRENS

Dr. Adolph H. Ahrens, formerly a resident of Saint Paul but recently on the staff of the Sandstone state hospital, died apparently from a stroke on April 15, 1953. He was seventy-one years of age, having been born on August 15, 1881, at Otranto, Iowa.

Dr. Ahrens attended the University of Minnesota from 1906-1909 and graduated from Hahneman Medical College in Chicago in 1910. He interned at Flower Hospital in New York City and took postgraduate training in cystoscopy at the New York Postgraduate School.

Dr. Ahrens began practicing in Saint Paul in 1912, and in May, 1952, moved to Sandstone where he was on the staff of the state hospital there.

Dr. Ahrens was a member of the Ramsey County Medical Society, the Minnesota State Medical Association, and the American Medical Association. He was a past president of the Saint Paul Automobile Club, a life member of the Saint Paul Athletic Club and a past president of the Optimist Club of Saint Paul.

Mrs. Ahrens had acquired a reputation in medical circles as a composer and singer, having sung in productions of the Saint Paul Civic Opera when she lived in Saint Paul. Dr. Ahrens is survived by his widow, Jane, a daughter, Mrs. Frederick H. Clapp, two granddaughters, a brother, Dr. Albert E. Ahrens, and a sister, Mrs. Clara Hedemark, all of Saint Paul.

ELTON FORREST CLOTHIER

Dr. E. F. Clothier, a practicing physician of Elk River for the past seventeen years, died on March 26, 1953, of a heart attack.

Dr. Clothier was born in Minneapolis, July 16, 1902. He graduated from the University of Minnesota Medical School in 1929 and interned at St. Mary's Hospital in Minneapolis and at Glen Lake Sanatorium. He practiced from September, 1929, to November, 1935, at Westfield, Wisconsin, before taking over the practice of Dr. G. E. Page at Elk River in 1935.

Dr. Clothier was a member of the East Central Medical Society, the Minnesota State Medical Association and the American Medical Association. He was also a member of the Northwest Pediatric Society.

Dr. Clothier lived at nearby Little Falls. He is survived by his wife, Rose; two sons, Alan of Elk River and Forrest of Wisconsin, and a daughter, Carole Ann, of Elk River.

PETER HUBERT CREMER

Dr. Peter H. Cremer, Hastings, Minnesota, died March 22, 1953, at the age of seventy-five.

Dr. Cremer was born March 21, 1878, at Cashton, Wisconsin. Tragedy struck his home during his childhood when diphtheria took three of his brothers and sisters within a few days and three more died during the following three weeks. A graduate of Rush Medical College, Chicago, in 1904, he practiced a short time at Red Wing and Cannon Falls before locating at Hastings in 1916.

Dr. Cremer was mayor of Hastings from 1942 to 1944 and was a Dakota County Commissioner from 1932 to 1944. He also served as city health officer.

In 1949 he was named the eminent first citizen of Hastings by the Lyle Russell Post of the Veterans of Foreign Wars. Attending the ceremony were Governor Luther Youngdahl and high ranking officials of the Minnesota Veterans of Foreign Wars.

He was a member of Goodhue County Medical Society, the Minnesota State Medical Association and the American Medical Association.

Dr. Cremer was married to Delia Noel of Mazeppa in 1914. They had no children. He is survived by one brother, Herman Cremer, of Cashton, Wisconsin.

FRANCIS J. CROMBIE

Dr. Francis J. Crombie, of North Saint Paul, died March 9, 1953, at the age of forty-eight.

Dr. Crombie was born at Columbus, Ohio, September 8, 1904. He graduated from the University of Minnesota Medical School in 1931 and interned at Miller Hospital, Saint Paul. He had practiced at North Saint Paul since 1931 and had opened new offices in 1950 on Highway 100 near the town. During the past year, Dr. M. J. Bernier had been associated with him.

Dr. Crombie was widely known as a breeder of Holstein cattle and was a director of the Twin City Milk Producers Association.

He was a member of the Ramsey County Medical Society, the Minnesota State Medical Association and the American Medical Association and was a member of the staff of St. John's Hospital in Saint Paul.

Dr. Crombie was married to Veronica Zankel while a student at the University. His wife and six children survive him.

FREDERICK ALONZO ENGSTROM

Dr. Frederick A. Engstrom of Wanamingo, Minnesota, died on April 8, 1953.

Dr. Engstrom was born in Red Wing on June 15, 1883, and was reared in Cannon Falls where he attended high school. After attending Carleton College for two years, he transferred to the University of Minnesota where he received his medical degree in 1908.

During World War I, he served in the Army Medical Corps and was discharged in 1919 as a major.

Dr. Engstrom, for a time, was a member of the Rice County Medical Society, the Minnesota State Medical Association and the American Medical Association. He had practiced for over thirty years in Wanamingo and

(Continued on Page 548)

Childhood constipation deserves treatment which gently restores normal peristaltic movements; drastic elimination cannot permanently correct the condition and may be harmful to the child.

ROLE OF METAMUCIL® IN ESTABLISHING PROPER BOWEL HABITS IN CHILDREN

Metamucil's bland, demulcent bulk is a physiologic way to manage bowel dysfunction in youngsters.

Metamucil does more than merely clear the constipated bowel. When taken with adequate amounts of water, Metamucil's hydrophilic colloid has a proved corrective effect on the child's misfunctioning intestines. Use of Metamucil early in life assures a natural method of elimination and helps guard against formation of the "laxative habit" in later years.

Mixed with fruit juice, milk or the child's favorite beverage, Metamucil provides a gentle, corrective stimulation to peristalsis. There is never a "rush"—never a weakening diarrhea with Metamucil.

Metamucil is the highly refined mucilloid of Plantago ovata (50%), a seed of the psyllium group, combined with dextrose (50%) as a dispersing agent. It is accepted by the Council on Pharmacy and Chemistry of the American Medical Association.

SEARLE Research in the Service of Medicine

FREDERICK ALONZO ENGSTROM

(Continued from Page 546)

was a member of the local Masonic Lodge and the Wanamingo school board for a number of years. In 1936, he was chairman of the Goodhue County Democratic Committee.

Dr. Engstrom is survived by his wife, two sons, Conley A. of Eden Prairie and Dr. Frederick W. of Detroit, Michigan, and a daughter, Mrs. Janet Hendricksen of Minneapolis.

MIGUEL ANGEL FLORES

Dr. M. A. Flores, a Costa Rican native who was a consul at Rosemount, Minnesota, and practiced medicine there, died suddenly of heart disease on April 14, 1953. He was sixty-two years of age.

Dr. Flores was born at Heredia, Costa Rica, April 19, 1890. He obtained his M.D. degree from the University of Pennsylvania in 1918 and practiced for four years at Lonsdale before moving to Rosemount.

Dr. Flores is survived by his widow and three children, Michael, Ofelia, and Ester. Two brothers and a sister live in Costa Rica and one sister in Mexico.

JENNETTE M. McLAREN

We wish to pay tribute, worthy and well deserved, to Dr. Jennette M. McLaren. She was born in McHenry County, Illinois, December 26, 1857, the daughter of Mr. James A. McLaren and Susanna Quilhot McLaren and died Easter Sunday evening, April 5, 1953, at Fairview Hospital in Minneapolis, Minnesota—a span of over ninety-five years.

A group of the McLaren family, about 1750, came from Pertshire, Scotland, where the family had been for 300 years. They settled in and about Johnstown, New York. Some moved to various parts of the United States but Dr. McLaren's direct ancestors remained a considerable time in the above location. Her father came west and took up government land in northern Illinois. Dr. McLaren's mother was of French origin and one ancestor, a physician, came to America from Bordeaux, France.

Dr. McLaren attended the local rural school and high school in Illinois and then taught for six years. She matriculated in the Medical School at the University of Michigan, where, according to her statement, the course had been rather recently extended from two to three years. She was graduated June 30, 1887.

There were few available intern positions for women at that time but she secured a fourteen months' internship in the New England Hospital for Women and Children in Boston. Because of the excellent service which she received and liked, she stayed over the regular term to fill a vacancy in the dispensary service. She always praised the hospital and its work.

She was licensed in Minnesota by examination (License Number 60) on April 8, 1889, and first began practice in Minneapolis, in an office on Western Avenue. She brought with her to Minneapolis Mary M. Hall, an excellent nurse from the Boston Hospital School of Nursing. After nine months, she came to Saint Paul where she was engaged as house physician in a private hospital of nine beds, opened at 653 and 655 Portland Avenue in November, 1889, by Dr. Helen W. Bissell. Doctors Charles A. Wheaton, Archibald MacLaren, John F. Fulton and Perry H. Millard were among those who brought patients to the hospital. Doctor Bissell had been the resident physician in the Boston Hospital.

From 1890, for ten or twelve years, Doctor McLaren was associated with Dr. Archibald MacLaren in the gynecological clinic at the West Ninth Street Dispensary and assisted him in many hospital cases till the introduction of interns obligated him to give them the opportunity for work.

At one time she had charge of the maternity cases at the Salvation Army Home, before the Home became associated with the Department of Obstetrics of the University of Minnesota. She also taught obstetrics at the City and County (Ancker) Hospital and maintained an office in the Endicott Building.

When the Lowry Building was being planned, Dr. A. W. Dunning, a specialist in nervous and mental disease (for whom the Dunning Playground was named) asked Doctor McLaren to share his office and from the plan of the building they chose Suite 803. Before the expiration of their first lease at 803 Lowry Building, in September, 1915, Doctor Dunning and Doctor McLaren asked Dr. Katherine A. Nye to become associated with them. In December, 1915, Dr. Dunning, after a few hours' illness, died of a coronary disease. Doctor McLaren and Doctor Nye continued to occupy this suite and in September, 1921, Dr. Lillian L. Nye joined them. Doctor McLaren continued to practice at 803 Lowry Medical Arts Building until her retirement in 1939 at the age of eighty-one.

In 1911, she visited England spending some time in London clinics. Later, she went to Johns Hopkins for observation of Dr. Wm. Osler's excellent work.

Doctor McLaren was affiliated with most of the Saint Paul hospitals, but more particularly in the later years of her practice with St. Luke's and Miller. She had an extensive practice and a host of friends.

About 1929 she went on a nine months' trip around the world.

Throughout her medical career, Doctor McLaren was active and interested in many civic and philanthropic organizations, the Community Chest, Salvation Army Home for Girls, Jean Martin Brown Home, Protestant Home, the Young Women's Christian Association, Baby Welfare Association (now the Family Nursing Service), Minnesota State Board of Examiners of Nurses, and the Alpha Epsilon Iota sorority. She was very active in her church, especially in the Christian Endeavor and missionary departments. She was a member of the Dayton Avenue Presbyterian Church of Saint Paul until 1938, when she became a member of the Grace Presbyterian Church of Minneapolis. She moved from Saint Paul to Minneapolis on December 30, 1937, making her home with Mr. and Mrs. James E. Williams.

She was an emeritus member of the University of Michigan Alumni Association, a member of the Ramsey

County Medical Society, and the Minnesota State and American Medical Associations.

Doctor McLaren used to say, "While a man's life does not consist of the abundance of things which he possesses, yet I cannot help liking some of the things which I possess." She was most happy on three occasions—the first, when she received her Emeritus Honor Alumni pin from the University of Michigan in 1949; the second, when she received her Fifty-Year pin from the Minnesota State Medical Association; and the third, when she was given her Life Membership Certificate from the Minnesota State Medical Association.

She was active until a week before her death. She had many hobbies. She was a very genuine person and gave of herself unselfishly for others, performing many deeds of kindness of which few knew. If human and unavoidable mistakes were made, she always went a long way to make amends.

On December 1, 1952, Doctor McLaren mailed the following copy in her own handwriting to Dr. Katherine A. Nye:

> "I know the night is near at hand,
> The mists lie low on hill and bay,
> The autumn leaves are drifting by
> But I have had the day.
> Yes, I have had, dear Lord, the day:
> When at thy call I have the night
> Brief be the twilight as I pass
> From light to dark, from dark to light."
>
> S. Weir Mitchell, M.D.

Dr. McLaren is survived by three nieces: Mrs. C. E. Taylor of Orange, New Jersey; Mrs. C. B. Long and Mrs. Ada Sprecher, both of San Jacinto, California. Two nephews, John McLaren Burbank of Saint Paul and James Frank Burbank of Woodstock, Illinois, also survive her.

Because of Doctor McLaren's Scotch and French descent, I would like to paraphrase a quotation from the song "Beside the Bonnie Briar Bush" which surely applies to her, even though her remains are in the family lot in Woodstock, Illinois.

> "The Doctor—bless her sainted soul—
> Has made her final call."

We honor Dr. Jennette M. McLaren as a grand *pioneer physician.*

Katherine A. Nye, M.D.

CHARLES K. MAYTUM

Dr. Charles K. Maytum, a senior consultant in the Division of Medicine at Mayo Clinic, died on April 10, 1953, at the age of fifty-seven years.

Dr. Maytum was born at Alexandria, South Dakota, December 20, 1895. He attended South Dakota University before obtaining his M.D. degree from the University of Iowa in 1919. He interned at Cincinnati General Hospital and practiced in South Dakota in 1921 and 1922 before taking a residency at the Mayo Foundation from 1922 to 1925. He joined the Mayo Clinic in 1925. In 1934, Dr. Maytum was made an assistant professor at the University of Minnesota graduate medical school and the Mayo Foundation. In 1945, he became an associate professor.

For three years, during World War II, Dr. Maytum served as a lieutenant colonel and later as a colonel in the Medical Corps of the Army.

He was a member of the Olmsted-Houston-Fillmore-Dodge County Medical Society, the Minnesota State Medical Association, and the American Medical Association.

Dr. Maytum is survived by his wife, Elinora; a daughter, Mrs. John W. Berkman, of Rochester; two sons, Wellington James of Virginia Beach, Virginia, and Charles David of Albuquerque, New Mexico. Three brothers and four sisters also survive.

RELIABILITY!

For years we have maintained the highest standards of quality, expert workmanship and exacting conformity to professional specifications . . . a service appreciated by physicians and their patients.

ARTIFICIAL LIMBS, TRUSSES,
ORTHOPEDIC APPLIANCES,
SUPPORTERS, ELASTIC HOSIERY

Prompt, painstaking service

Buchstein-Medcalf Co.
223 So. 6th St. Minneapolis 2, Minn.

BROWN & DAY INC SAINT PAUL U.S.A. SERVICE QUALITY

For
Professional Supplies
and
Service

BROWN & DAY, INC.
St. Paul 1, Minnesota

◆ Of General Interest ◆

First Lieutenant Fae M. Adams, M.C., of San Jose, California, was sworn in on March 11, 1953, the first woman to receive a commission in the Regular Army of the United States. One of the Army's twenty women reserve medical officers now on active duty, Lieutenant Adams has been stationed at Camp Crowder, Missouri, since July 6, 1952. She is the first woman medical officer integrated into the Regular Army under legislation passed by the 82nd Congress.

* * *

Dr. Kristofer Hagen, of Cokato, attended a medical conference in Chicago, early in March. **Dr. William T. Greenfield,** also of Cokato, attended a meeting of the American Academy of General Practitioners, March 22, in St. Louis, Missouri.

* * *

Dr. Malcolm W. Hargraves, of Rochester, was named by the governor to a four-year term on the State Water Pollution Control Commission, in March. He succeeds Val P. Stauder of Saint Paul.

* * *

Dr. Paul C. Leck, Austin, attended a meeting of the House of Delegates of the American Medical Association in Washington, D. C., March 13-14. The session was called to consider President Eisenhower's proposal to establish a new cabinet post—that of health and education—under the Federal Security Administration. President Eisenhower addressed the group Saturday, March 14.

* * *

Dr. Robert Weyhrauch, formerly a member of the staff of the Alexandria Clinic, joined a medical clinic in Waterloo, Iowa, in March. Dr. Weyhrauch recently was separated from the Army Medical Corps.

* * *

Dr. Leon M. Boyd, of Wadena, attended the meetings of the Graduate Medical Assembly, held in New Orleans, Louisiana, in March.

* * *

Dr. K. L. Nelson, health officer at Warroad, in conjunction with **Dr. C. B. Nelson,** of the Minnesota State Health Department, issued a public statement in March concerning precautions to be taken in preventing and caring for persons with infectious hepatitis. The community of Warroad was having a mild epidemic.

* * *

Dr. Henry Van Meier, of Stillwater, spoke Sunday, March 15, from the pulpit of the Ascension Lutheran Church, Saint Paul, on "Guilt, Tranquility, and God." Dr. Van Meier's talk included both the psychiatric and religious development of his topic.

* * *

Dr. Clayton Klakeg, of Rochester, was married, March 3, to Miss Shirley Jane Richards, of San Bernardino. California. The wedding took place in the First Congregational Church of San Bernardino.

* * *

Dr. John M. Waugh, Mayo Clinic surgeon, was honored March 14, at the Founders' Day convocation of Tarkio College at Tarkio, Missouri, for "outstanding achievements and services to others." A 1927 graduate of Tarkio College, Dr. Waugh was one of ten alumni and five citizens who received citations of merit.

* * *

Dr. Robert Hebbel, professor of pathology at the University of Minnesota, spoke at the meeting of the Twin City Society of Medical Technologists, held at Macalester College, Saint Paul, March 19.

* * *

Dr. J. E. Murphy, who has practiced in Staples since June 1949, left for Whitefish, Montana, March 6. where he will be associated with the John B. Simons Clinic.

* * *

Dr. Sam Boyer, Jr., of Duluth, spoke on "Diseases of the Heart and Their Treatment," to the members of the Private Duty Section, Second District Nurses Association, at the March 17 meeting held at St. Luke's Hospital in Duluth.

* * *

Dr. F. C. Westerman, of Montgomery, was elected president of the staff of directors of the new Community Memorial Hospital of New Prague, at the February meeting.

* * *

Dr. Donald C. Balfour, director emeritus of the Mayo Foundation, has been elected foreign correspondent in the division of surgery, obstetrics and surgical specialties of the National Academy of Medicine.

* * *

Dr. and Mrs. C. J. Lund, of Fergus Falls, returned March 14, from a trip that took them to New Orleans, Biloxi and Mobile. While in New Orleans, Dr. Lund attended the New Orleans postgraduate assembly which about 3,000 physicians attended.

* * *

Speakers at the Minnesota Welfare Conference held March 23-25 in the Nicollet Hotel, Minneapolis, included: **Dr. C. Knight Aldrich,** associate professor of psychiatry at the University of Minnesota; **Dr. Frank H. Krusen,** of the Mayo Clinic and **Dr. Robert Mooney,** specialist in internal medicine, Saint Paul.

* * *

Dr. Viktor Wilson, Rochester, Sixth district health officer spoke at an open meeting on public health at the Methodist Church in Austin, April 1. **Dr. Paul**

Official Registration Figures

MINNESOTA STATE MEDICAL ASSOCIATION'S ANNUAL CONVENTION
Saint Paul, Minnesota May 18-20, 1953

Doctors	1,907
Nurses, Dietitians, Technicians, Social Workers and Medical Secretaries	410
Scientific Exhibitors	159
Commercial Exhibitors	536
Women's Auxiliary	544
Guests (Miscellaneous)	836
Total	4,392

We express our appreciation to the many doctors who found time to visit our booth and discuss the security, income and tax-exempt features of Municipal Bonds. We shall continue to do our best to retain their confidence.

Please feel free to write us for information concerning the advantages of municipal securities for your own savings program.

JURAN & MOODY
MUNICIPAL SECURITIES EXCLUSIVELY

TELEPHONES:
GArfield 9661
PRior 6423

93 E. SIXTH STREET
ST. PAUL 1, MINNESOTA

Leck, Austin physician, and several other local persons also addressed the group.

* * *

Dr. I. L. Oliver, of Graceville, attended the Inter-American Session of the American College of Surgeons, held at Sao Paulo, Brazil, during January and February. More than 200 surgeons from the United States attended various clinics and medical seminars throughout South America.

* * *

Dr. C. G. Uhley, of Crookston, president of the Minnesota division of the American Cancer Society, was the principal speaker at an open meeting accenting county cancer fund appeal, which was held in the Auditorium at Thief River Falls, March 19. Dr. Uhley explained recent developments in the battle against cancer and showed motion pictures dealing with the disease. **Dr. Theodore Bratrud,** of Thief River Falls, also spoke.

* * *

Dr. Delmar R. Gillespie, of Saint Paul, attended a regional meeting of the American College of Physicians, held at Kansas City, Missouri, March 20. Dr. Gillespie also visited Fort Leonard Wood, Missouri, where he was stationed during World War II.

* * *

Dr. A. L. Walonick, who has been in practice with the Twin Valley Medical Center for the past two years, left in March to practice in St. Louis Park. **Dr. C. J. Stadem** now operates the Twin Valley Center alone.

* * *

Dr. P. B. Schoeneberger, of Perham, talked on recent developments in the treatment of cancer to the members of the Frazee Women's Study Club, March 26. Movies on cancer were also shown.

* * *

A new cobalt unit to aid in cancer treatment, purchased with a $50,000 gift from an anonymous Minneapolis donor, was put into operation at the University of Minnesota in April. The unit is part of the equipment of the University's radiation therapy division.

* * *

Dr. J. E. Edwards, of the Mayo Clinic, spoke on his experience in Korea last fall as a consultant to the U. S. surgeon general, at the spring convention of the International Relations Club held in Rochester, March 20. The International Relations Club is sponsored by colleges in the Rochester area.

* * *

Three Duluth surgeons—**Dr. Gordon J. Strewler, Dr. Josiah Fuller,** and **Dr. George F. Nisius,** discussed "Timely Cancer Topics," at a cancer forum, held March 21, in St. Luke's Hospital in Duluth.

* * *

Dr. F. F. Callahan, Saint Paul, chief of medical services, state division of social welfare, took part in a panel discussion. "What are the Problems Affecting the Employment of the Tuberculous in Industry?" at the spring meeting of the Minnesota Rehabilitation Association, held at Ft. Snelling, March 24.

* * *

Dr. Paul J. Bilka of Minneapolis, gave a talk before the Grand Forks District Dental Society at Grand Forks, March 18. His subject was "Recent Advances in the Diagnosis and Treatment of Rheumatic Diseases."

* * *

Dr. I. Fisher, of Minneapolis, spoke before a regional seminar meeting at Marshall, Minnesota, March 31. Dr. Fisher's topic was skin cancer.

* * *

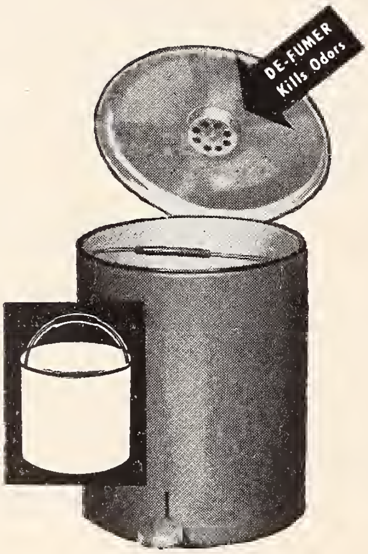
Dr. and Mrs. Bernard Flynn, of Hibbing, celebrated their tenth wedding anniversary, March 8, by entertaining the members of the Adams Clinic staff, of which Dr. Flynn is a member.

* * *

Dr. H. G. Ahrens, of Worthington, associated with the Worthington Clinic for the past year, left March 26 for Lincoln, Nebraska, where he now practices.

* * *

Dr. James J. Waring, professor of medicine at the University of Colorado Medical School, gave the eighteenth annual John W. Bell Tuberculosis lecture to members of the Hennepin County Medical Society, April 6, in Minneapolis. The lectureship is



SPECIAL . . .

ONLY **$9.95**

Entirely chrome plated
WASTE RECEPTACLES with
porcelain enamel removable
inner pail, 12 quart size.

C. F. ANDERSON CO., Inc.
Phone: ATlantic 6508
901 Marquette Avenue **Minneapolis, Minn.**

named for the late Dr. John W. Bell, who practiced medicine in Minneapolis for fifty-one years.

* * *

Dr. James Wagoner, of Harmony, recently moved into his new clinic building which was completed March 22.

* * *

Dr. W. G. Benjamin, Dr. R. J. Kotval, and **Dr. R. W. Keyes,** of Pipestone, attended the Lyon-Lincoln County medical seminar, March 31, held at Marshall.

* * *

Two representatives of the State Board of Health, **Dr. R. N. Barr,** Deputy Executive Secretary for the State Board, and **Dr. Helen M. Knudsen,** of the Hospital Facilities Division, spoke at Hastings, March 25, to a group of citizens trying to decide what must be done to get Memorial Hospital finished and into operation.

* * *

An acute shortage of nurses forced partial closure of the White Earth Indian Hospital on the reservation. **Dr. R. W. Williams,** Minneapolis area medical officer for the U. S. Public Health Service, announced in March that admissions to the hospital would stop April 1, and thereafter patients are to be transported to the Indian Hospital at Cass Lake.

* * *

Dr. Clark H. Millikan, of the Mayo Clinic, participated in a postgraduate course in neurology which was sponsored by the University of Kansas School of Medicine in Kansas City, Kansas, March 18.

* * *

Dr. John Giebenhain, recently separated from service with the army medical corps, resumed his practice at 2220 Lowry Avenue N., Robbinsdale, in March.

* * *

Dr. E. V. Bridge, medical director and superintendent of the Mineral Springs Sanatorium at Cannon Falls, spoke to the members of the Northfield Lions Club, March 16, advocating the practice of taking chest x-rays of all patients admitted to the local hospital.

* * *

Dr. Edgar V. Allen and **Dr. Robert R. Kierland,** of Rochester, attended the special session of the House of Delegates of the American Medical Association, held in Washington, D. C., March 14.

* * *

Dr. Hendrik De Kruif, of Fergus Falls, spoke to people of Fergus Falls in March urging better support of the blood program there, which is facing an acute crisis due to lack of donors for blood replacement.

* * *

Dr. M. H. Larson, who has been operating a small hospital at Nicollet, began practice in Lake Benton in the new clinic which was completed late in April.

KNOX GELATINE
AS A
PHARMACEUTICAL PRODUCT

Not all gelatine
is made with pharmaceutical care!

Not all gelatine is made like KNOX!

For example, **Knox** is made with the same rigid type of controls which are back of the only accepted blood plasma extender for use in shock management. A number of gelatines have an acid pH whereas the pH of **Knox Gelatine** is neutral.

For over 50 years **Knox** has always had the patient in mind, and every one of the seventeen steps in the **Knox** operation is controlled as carefully as the finest pharmaceutical, with the result that **Knox** standards are higher than U.S.P. and 85 to 87 per cent of **Knox Gelatine** is pure protein composed 100 per cent of various amino acids.

Knox Gelatine is practically standard in the diets of Diabetes, Colitis, Peptic Ulcer and Low Salt, Reducing and Liquid and Soft Diets.

Behind the Scenes KNOX GELATINE

If you are interested in seeing just how Knox Gelatine is made, write for our new photographic brochure, *"Behind the Scenes with Knox Gelatine"* (reading time—10 minutes). At the same time specify brochures on any diets mentioned above in which you may be interested. Knox Gelatine, Johnstown, N. Y. Dept. MM

Available at grocery stores in 4-envelope family size and 32-envelope economy size packages.

KNOX GELATINE U. S. P.
ALL PROTEIN NO SUGAR

Dr. James H. De Geest, Minneapolis General Hospital intern, was injured when the ambulance in which he was making an emergency sick call, collided with an automobile. Dr. De Geest suffered a nose injury. The ambulance driver and the driver of the automobile were not hurt.

* * *

Dr. J. Arnold Malmstrom, of Virginia, suffered a heart attack March 19, at his home. He is reported doing well at the Virginia Municipal Hospital but he will be hospitalized for a considerable period of time.

* * *

Dr. Charles W. Mayo, of Rochester, spoke on "Ulcerative Colitis" at a meeting of the Dutchess County Medical Society in Poughkeepsie, New York, March 11.

* * *

A Russell J. Moe Scholarship fund was established by the headmaster at Shattuck School, Faribault, in March, in memory of the late **Dr. Russell J. Moe,** Duluth physician and surgeon who died March 8. Dr. Moe's elder son, Russell, Jr., was graduated from Shattuck in 1952, and another son, Richard, is a member of the junior class at the present time.

* * *

Dr. Warren E. Wilson, of Northfield, was elected city physician for one year by the Northfield City Council at the meeting held March 17.

* * *

Dr. Kathleen B. Jordan, of the Granite Falls Riverside Sanatorium medical staff, and field physician for the state Christmas Seal organization, gave tuberculin test check-ups to about 1,135 Owatonna school children, the week of March 23.

* * *

Dr. A. H. Pemberton, of Rochester, was guest speaker at a meeting of the Fellows' Association of Texas, the membership of which is made up of former fellows of the Mayo Foundation, at Temple, Texas, March 7.

* * *

Dr. K. A. Peterson, disaster medical officer at Marshall, assisted with a four-day disaster institute held at Marshall High School, March 18-21, for Red Cross branch officers and city officials from surrounding towns.

Dr. L. C. Barr, of Albert Lea, assisted with the local spring immunization clinics held in the community rural schools.

* * *

Dr. J. M. Gacusana and **Dr. K. W. Covey,** of Mahnomen began a week-end schedule of taking calls, in March. Only one of the doctors will be available each weekend from Saturday noon until Monday morning. As a public service, the local paper will carry a notice each week listing the doctor who is on call.

* * *

Dr. H. L. Huffington, of Montevideo, opened an office for practice in the Anderson Building at Waterville, April 15.

* * *

Drs. Arlie R. Barnes, William H. Dearing, Hugh R. Butt, and **Edgar V. Allen,** of the Mayo Clinic, were directors of Course No. 4, "Selected Subjects in Internal Medicine," conducted at the Mayo Clinic and Mayo Foundation for members of the American College of Physicians, the week of March 23. Course No. 1 was given in Cleveland; Course No. 2, in Los Angeles; and Course No. 4, in New York.

Guest speakers at the course given in Rochester included **Dr. Edmund B. Flink,** professor of medicine at the University of Minnesota; Dr. Carl V. Moore, professor of medicine in Washington University, St. Louis; Dr. John E. Howard, professor of medicine at Johns Hopkins University, Baltimore; Dr. Irvine H. Page, director of research in the Cleveland Clinic, Cleveland, Ohio; Dr. H. Marvin Pollard, professor of medicine in the University of Michigan, Ann Arbor; Dr. Leon Schiff, professor of medicine at the University of Cincinnati; and Dr. Eugene A. Stead, Jr., professor of medicine at Duke University, Durham, North Carolina.

* * *

Drs. R. P. Buckley, R. J. Dittrich, George Doyle, R. A. Place and **John Powers,** all of Duluth, assisted in the immunization clinics recently held throughout the Duluth parochial schools.

* * *

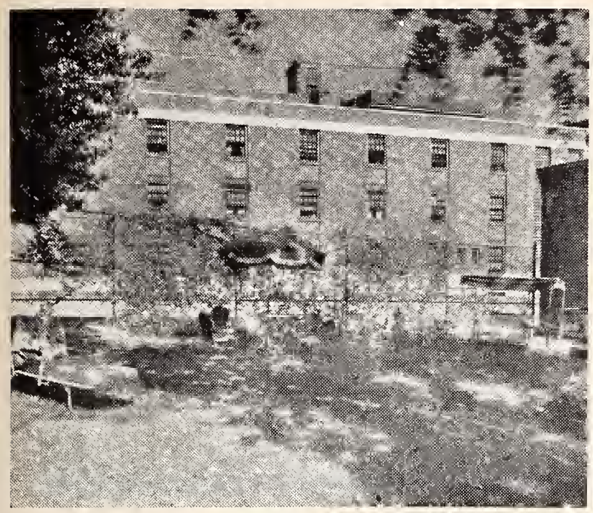
Dr. Mario Fischer, of Duluth, was elected chairman of the sub-committee named to work with the architect on the plans for St. Mary's Hospital in-

The Birches Sanitarium, Inc.

2391 Woodland Avenue
Duluth 3, Minnesota

A hospital for the care and treatment of Nervous and Mental disorders. Quiet, cheerful environment. Specially trained personnel. Recreational and occupational therapy.

Dr. L. R. Gowan, M.D., M.S., Medical Director



Outdoor Recreation

Saint Paul's Exclusive

CRESTVIEW

NEUROPSYCHIATRIC

HOSPITAL

New . . Modern . . Complete . .

Providing the highest standard of service at the lowest cost.

- Occupational therapy and recreational department.
- Complete X-ray and laboratory.
- Electrocardiography—basal metabolism.
- Electroencephalography available.
- All patients rooms air-conditioned.
- Background music and psychotherapy sound equipment.
- Medically staffed by every neurologist and psychiatrist in Saint Paul.
- Especially trained nursing staff.

MEMBER of the American Hospital Association
MEMBER of the Minnesota Hospital Association
APPROVED by the Minnesota State Medical Association
and the Ramsey County Medical Society.

Crestview Hospital Saint Paul

CRESTVIEW HOSPITAL • 145 W. College Ave., St. Paul
GArfield 5841
A non-profit organization

American Hospital Association Member

firmary, at the meeting of the St. Louis County board, held March 16. **Dr. P. G. Boman**, and **Dr. A. O. Swenson** were also named to the committee.

* * *

Dr. M. H. Larson, of St. Peter, attended a jubilee dinner in Milwaukee, March 26, held in honor of the twenty-fifth anniversary of his graduation class at Marquette University Medical School.

* * *

Dr. C. A. Williams, of Pipestone, attended the American Academy of General Practice meeting held in St. Louis, Missouri, the last week in March, on his way home from a six-weeks' vacation spent at Houston, Texas, and Florida.

* * *

Dr. C. E. Wilson, acting superintendent of the Blue Earth Community Hospital, reported on policies and statistics for the preceding year to the members of the Hospital Auxiliary at their annual meeting, held March 20.

* * *

Clarkfield, one of the largest schools in Yellow Medicine County to have a 100 per cent record of students participating in the tuberculin test survey, was presented its TB Control Certificate by **Dr. Kathleen Jordan**, field physician for the state Christmas Seal organization, in March.

* * *

Dr. H. L. Stemsrud, **Dr. E. R. Sather**, and **Dr. L. F. Wasson**, of Alexandria, attended a dinner meeting of the Park Region Medical Society, held at Fergus Falls, March 21.

* * *

A free test for diabetes was offered the people of Nobles County during the period from April 6 through April 18. **Dr. D. J. Halpern**, of Brewster, chairman of the Nobles County Health Council, and **Dr. D. E. Nealy**, of Adrian, assisted the committee working on the project. The survey was sponsored by the Nobles County Health Council, the Public Health Nursing Service, the County Medical Society, and District 5, of the Minnesota Department of Health.

* * *

Dr. Frederick W. Behmler, formerly a member of the State Board of Health and now chief of staff at the Stevens County Community Hospital, was the principal speaker at a meeting of local citizens of Alexandria held March 26, to discuss construction of a Douglas County Community Hospital.

* * *

Dr. Owen H. Wangensteen, chief of the department of surgery, University of Minnesota Medical School, wrote a series of news stories on cancer for the Associated Press in March and April.

* * *

Dr. J. C. Vezina, of Mapleton, visited Dixon, Illinois, in March to attend a funeral of an old friend and visited many of his friends of years gone by when he was a coach at the Dixon High School.

HOMEWOOD HOSPITAL is one of the Northwest's outstanding hospitals for the treatment of Nervous Disorders—equipped with all the essentials for rendering high-grade service to patient and physician.

Operated in Connection with Glenwood Hills Hospitals

HOMEWOOD HOSPITAL
Corner Penn and Plymouth Avenues North
Minneapolis Minnesota

The Dixon paper carried an interview with Dr. Vezina on changes that have come about in some of the games, since 1920 when he was coaching.

* * *

Dr. Carl Kohlbry, medical director for the Duluth public schools, spoke on "Common Emergencies in Childhood," at the First Aid Instructors Club meeting, April 8, held at the Red Cross headquarters in Duluth.

* * *

Shortages of qualified personnel are slowing down chronic hospital planning in Minnesota, **Dr. Helen Knudsen** of the State Health Department said in a news interview, March 29.

* * *

At present, there are four hospitals in the state designed to treat patients with chronic diseases and, combined, these institutions have only 409 beds. Three of the units—St. Luke's Infirmary at Duluth, the Variety Club Heart Hospital on the University of Minnesota campus, and St. John's Hospital in Saint Paul—have been built since 1947 with federal aid. The fourth is the Virginia Infirmary at Virginia, constructed with funds furnished by St. Louis County. The building program, which has doubled the state's capacity in the last six years, is now temporarily stalled due to lack of trained personnel to staff further units.

* * *

Dr. Charles C. Cooper, of Saint Paul, held open house in St. Louis for all the Minnesota M.D.'s who were attending the American Academy of General Practitioners meeting held in St. Louis the last week in March. Physicians from Saint Paul who were present at the open house include **Dr. James Reid, Dr. John Ryan, Dr. A. E. Ritt, Dr. Floyd Thompson, Dr. H. J. Setzer, Dr. E. J. Fogelberg,** and **Dr. Arthur E .Walker.**

* * *

Dr David Hoehn, of Holdingford, returned March 27, after attending Medical Meetings in Los Angeles, California, and a meeting of the American Academy of General Practice in St. Louis, Missouri, for the past three weeks.

* * *

Dr. O. J. Swenson and **Dr. S. T. Normann,** of Waseca, attended the meeting of the American Academy of General Practice held at St. Louis, Missouri, the last week in March.

* * *

Dr. George S. Allen, formerly of New York, joined the staff of the Mineral Springs Sanatorium recently. He is assistant to **Dr. Ezra Bridge.** Dr. Allen was graduated from the University of Rochester Medical School in 1950, and interned at Memorial Hospital, Rochester, New York. Before coming to Mineral Springs, Dr. Allen was on the staff of the Veterans Hospital for tuberculosis patients at Batavia, New York.

* * *

Dr. W. M. Akins, of Red Wing, served as co-chairman for the annual Heart Fund campaign in the city, during the month of March.

* * *

Dr. L. B. Kuhlmann, of Melrose, initiated construction on a new medical office on Riverside Avenue near the Melrose Hospital, the first week in April.

* * *

Dr. Harold S. Diehl, Dean of the University of Minnesota Medical Sciences, was a guest member on the monthly doctor's round table which was televised on WCCO-TV at 8:45 a.m., Easter Sunday. The subject for discussion was chest x-raying of all hospital patients and employes as a protection against tuberculosis and an aid in discovery of tumors, cancer, heart disease, and other chest area conditions.

Regular panel members are **Dr. J. Arthur Myers,** Professor of Medicine and Public Health, University of Minnesota; **Dr. John Briggs,** Saint Paul, Chief of Medicine at Ancker Hospital; and **Dr. Ezra V. Bridge,** superintendent of Mineral Springs Sanatorium, Cannon Falls.

* * *

Dr. and Mrs. R. A. Beise of Brainerd will be Minnesota's guests of honor at the First Western Hemisphere Conference of the World Medical Association, to be held in Richmond, April 22-25, 1953, in observance of the lengthening of life and the constant improvement of human health.

Governor C. Elmer Anderson made the selection at the request of Governor John S. Battle of Virginia, who had asked each of his forty-seven fellow-Gov-

. . . now conveniently located for faster service

You need no longer risk driving through congested traffic to examine new equipment. In this new, modern store you will find complete stocks of instruments and supplies for the physician; model displays of hospital equipment of every type; and a comprehensive range of equipment, apparatus and supplies for the modern medical laboratory. We cordially invite you to visit us at your convenience, or call us for prompt emergency service. Free parking is provided adjacent to building. Telephone: LIncoln 7601.

ALOE
A. S. ALOE CO.

a. s. aloe company OF MINNESOTA • 927 Portland Ave. • Minneapolis 4, Minn.

ernors to appoint a physician who will reach the age of seventy-five during 1953 to visit Virginia and tell of medical advances that have taken place during his lifetime. The invitation includes the physician's wife.

Dr. Beise, a surgeon, was born in 1877, just before pioneering Robert Koch published a history-making treatise on causes of infection, opening the way to rapid progress in various fields of medicine. Dr. Beise was graduated in 1901 from Rush Medical College, Chicago.

At the Richmond conference, guests will be greeted by Dr. Louis H. Bauer, president of the American Medical Association, and by leaders of Latin American medical societies. In addition to scientific sessions, there will be opportunities for visiting historic sites in Virginia, including the eighteenth century Williamsburg restoration. Expenses of the conference, and of guests and delegates, are covered through a grant by A. H. Robins Co., Inc., ethical pharmaceutical house of Richmond, on the occasion of its seventy-fifth anniversary.

* * *

Five new physicians, who were appointed as members of the permanent staff of the Mayo Clinic in April, are: **Drs. Lloyd G. Bartholomew, William J. Martin, Raymond V. Randall, Randolph A. Rovelstad** and **Donald A. Scholz.**

Dr. Bartholomew was graduated from the University of Vermont College of Medicine in 1944, interned at Mary Hitchcock Memorial Hospital, Hanover, New Hampshire, and was assistant in medicine following his internship. He served with the army medical corps for two years and was a fellow in medicine at Mary Hitchcock Hospital for a year. He entered the Mayo Foundation in April, 1949, and received the degree of M.S. in medicine from the University of Minnesota in July, 1952.

Dr. Martin received his medical degree from Georgetown University Medical School, Georgetown, Maryland, and interned and was a fellow at Georgetown University Hospital. He served with the army medical corps for two years. Dr. Martin entered the Mayo Foundation in 1949, and received the degree of M.S. in medicine in June, 1952.

Dr. Randall was graduated from Harvard College Medical School in 1945, interned at Massachusetts General Hospital, Boston, and served with the army medical corps for two years. He entered the Mayo Foundation in 1948, and received the degree of M.S. in medicine from the University of Minnesota in June, 1951. From 1951 to 1952 he was a teaching fellow in pediatrics and medicine at Harvard Medical School, and returned to the Mayo Foundation as an assistant to the staff in October, 1952.

Dr. Rovelstad was graduated from Northwestern University Medical School in 1944, interned at Passavant Memorial Hospital, Chicago, and entered the Mayo Foundation in January, 1945. He served with the army medical corps for two years and has been assistant to the Mayo Foundation staff since October, 1951. Dr. Rovelstad is a candidate for the Ph.D. degree in medicine.

Dr. Scholz received his medical degree from Western Reserve Medical School in 1945, interned at City Hospital, Cleveland, and served with the army medical corps for two years. He was a medical resident at City Hospital, Cleveland, for one year and entered the Mayo Foundation in July, 1949. He received the degree of M.S. in medicine from the University of Minnesota in July, 1952.

* * *

Dr. Howard L. Horns, Assistant Dean of the University of Minnesota Medical School, left for Fort Sam Houston, Texas, March 16, to serve with the U. S. Army.

Dr. Horns is certified by the Board of Internal Medicine and is an Associate Professor of Medicine. In 1949, he succeeded **Dr. Myron Weaver** as Assistant Dean. (Dr. Weaver left to become Dean of the new medical school of the University of British Columbia in Vancouver, Canada.) In this capacity, Dr. Horns has served as chairman of the Admissions Committee, chairman of the Student Work Committee and chairman of the Internship Committee. Now forty-one, Dr. Horns was rejected for military service in World War II.

As Associate Professor of Medicine, Dr. Horns has been chief of the Hematology Clinic of the University Hospital's Out-Patient Department, and in charge of the sophomore medical course in Physical Diagnosis. He has served for three months each year as attending physician to one of the medical services of the University Hospitals and has been the consultant in radioisotopes to the Ft. Snelling Veterans Hospital.

Dr. William F. Maloney has been appointed acting Assistant Dean of the Medical School. He was graduated from the University of Minnesota in 1941 with a major in Business Administration and received his medical degree in 1946. After his separation from the Army medical corps, Dr. Maloney served as a part-time staff member at Glen Lake Sanatorium and did special graduate work at the Trudeau Sanatorium, Saranac Lake, New York. From 1950 to 1952, he was a fellow in medicine at the University Hospitals and from July 1, until he was appointed Acting Dean, he held a National Heart Institute Traineeship in the Department of Medicine.

Dr. Maloney will devote part time to teaching and clinical service in internal medicine and part time to his duties as Acting Assistant Dean of the Medical School.

* * *

Assisting at laying the corner stone, March 30, for the new Mayo Clinic diagnostic building were **Dr. S. F. Haines**, chairman of the board of governors of the Mayo Clinic; **Dr. C. W. Mayo**, chairman of the Mayo Association; and **Dr. M. W.**

THE
MEDICAL PROTECTIVE
COMPANY
FORT WAYNE, INDIANA

PROFESSIONAL PROTECTION
EXCLUSIVELY
SINCE 1899

specialized service
assures *"know-how"*

MINNEAPOLIS Office:
Robert L. McFerran, Rep.,
2422 Clinton Ave. So., Apt. E-14,
Telephone Fillmore 1292

AT YOUR CONVENIENCE, DOCTOR . . .

you are cordially invited to visit our new and modern prescription pharmacy located on the street floor of the Foshay Tower, 100 South Ninth Street.

With our expanded facilities we will be able to increase and extend the service we have been privileged to perform for the medical profession over the past years.

Exclusive Prescription Pharmacy

Biologicals Pharmaceuticals Dressings
Surgical Instruments Rubber Sundries

JOSEPH E. DAHL CO.
(Two Locations)
100 South Ninth Street, LaSalle Medical Bldg.
ATlantic 5445 Minneapolis

North Shore
Health Resort
Winnetka, Illinois

*on the Shores of
Lake Michigan*

A completely equipped sanitarium for the care of
nervous and mental disorders, alcoholism and drug addiction
offering all forms of treatment, including electric shock.

SAMUEL LIEBMAN, M.S., M.D.
225 Sheridan Road **Medical Director** **Phone Winnetka 6-0211**

Comfort, representing the building advisory committee. Deposited in the stone was the traditional box containing papers, pictures and publications relating to the Mayo Clinic and the new building. Completion date for the $12,000,000 building has not been set.

* * *

Dr. Robert Holmen, of Saint Paul, presided at the laymen's session of the Ninety-fifth Annual Convention of the Augustana Lutheran Minnesota Conference, held at the Gloria Dei Lutheran Church, Saint Paul, during the week of April 13. Bishop Bo Giertz of Sweden was a guest at the conference.

* * *

Dr. Luther H. Zick, a general surgeon, joined the staff of the Grand Rapids Clinic in April. A 1943 graduate of the University of Michigan Medical School, Dr. Zick served with the army in World War II, and completed a residency at the Mayo Clinic before going into private practice at Tampa, Florida.

Construction has been started on a new clinic building in Grand Rapids.

* * *

Dr. Mary C. Ghostley, retired director of Lake Julia Sanatorium at Puposky (Lake Julia was closed in January because of the decline of tuberculosis incidence), was appointed director of District Health Unit No. 1 of the Minnesota Department of Health with headquarters at Bemidji. Dr. Ghostley was made a life member of the Minnesota Public Health Conference in 1950 and was presented with a plaque by the Minnesota Tuberculosis and Health Association for distinguished service.

* * *

Dr. Kenneth Stein, of Lakeville, joined the staff of the State Hospital in St. Peter, in April.

* * *

Dr. E. J. Wohlrabe, Dr. E. L. Penk, and **Dr. W. G. Nuessle,** of Springfield, assisted with the immunization program in the public and parochial schools in Brown County, from April 13 through April 17.

* * *

Dr. A. S. Midthune, of Lake Park, president of the Clay-Becker County Medical Society, endorsed the 1953 American Cancer Society crusade which opened in Detroit Lakes, April 1.

* * *

Dr. S. W. Watson, of Royalton, attended the convention of the American Academy of General Practice held in St. Louis, Missouri, the last week in March.

* * *

A farewell party for **Dr. C. R. Ferrell** was given April 9, by the citizens of Remer. Dr. Ferrell, who lived in Grand Rapids, had been making two trips a week to Remer to take care of his patients there.

* * *

Dr. L. N. Dale, of Red Lake Falls, attended the annual convention of the American Academy of General Practice, held in St. Louis, Missouri, the last week in March.

* * *

Dr. W. W. Will, of Bertha, attended the American Medical Association House of Delegates meeting, held in Washington, D. C., March 13-14.

* * *

Among the forty-two doctors who began fellowships at the Mayo Foundation spring quarter, are **Dr. John L. Juergens,** Belle Plaine, and **Dr. Lewis W. Larson,** Saint Paul, majoring in internal medicine, and **Dr. Frederick L. Behling,** Moorhead, majoring in orthopedic surgery.

* * *

Dr. D. E. Nealy, of Adrian, who was on the Nobles County Committee for the survey of diabetes project (April 6 through 18), was interviewed over station KWOA, Worthington, April 5, concerning the cause and treatment of diabetes.

* * *

Dr. Stewart C. Thomson, assistant director of the University of Minnesota School of Public Health, spoke on public health problems at the sixteenth annual continuation study course for pharmacists, held at the Center for Continuation Study, April 20-22.

* * *

Dr. Albert L. Walonick, formerly of Twin Valley, opened an office in St. Louis Park, April 9. Dr. Walonick, a graduate of the University of Minnesota, interned at Minneapolis General Hospital and was a navy surgeon for four years.

* * *

Dr. and Mrs. O. K. Behr, of Crookston, returned in April from a combined business and pleasure trip to California. In Los Angeles, Dr. Behr attended a meeting of the American College of Surgeons.

* * *

Dr. Glenn P. Schmitz, president of the Morrison County Medical Society, endorsed the 1953 American Cancer Society crusade, which opens in Little Falls, April 20.

* * *

Dr. Frank W. Newell, former University of Minnesota student and intern at Ancker Hospital, Saint Paul, has been named associate professor of ophthalmology at the University of Chicago.

* * *

The inaugural ceremony of Dr. Edward J. McCormick of Toledo, Ohio, as president of the American Medical Association, will be broadcast over the American Broadcasting Company network on Wednesday evening, June 3, by transcription inasmuch as the network will be devoted to the coronation ceremonies of Queen Elizabeth of England. Also transcribed on Wednesday night will be the popular "Dr. Christian" radio program featuring the well known actor Jean Hersholt. This will be carried by the Columbia Broadcasting System. Physicians who cannot attend the AMA meeting in New York are urged to watch the radio listings in the newspapers for the local broadcasting times.

* * *

Correction.—In the April issue Dr. Albert V. Stoesser was incorrectly reported to be one of the candidates orally examined by the new Subspecialty Board of Pediatric Allergy, whereas he served as an examiner.

The item should have read:

Dr. Albert V. Stoesser, Department of Pediatrics, University of Minnesota, was one of the examiners on the new Subspecialty Board of Pediatric Allergy which examined its first group of candiates orally at the Children's Hospital, Harvard Medical School, Boston, February 25, preceding the annual meeting of the American Academy of Allergy.

PHYSICIANS AND HOSPITALS SUPPLY CO., Inc.
1400 HARMON PLACE, MINNEAPOLIS, MINN.
INSTRUMENTS · TRUSSES · EQUIPMENT · PHARMACEUTICALS · DRUGS
MAIN 2494

Insurance at a Saving
Druggists' Mutual Insurance Company
OF IOWA, ALGONA, IOWA
Fire - Tornado - Automobile Insurance
Prompt Loss Service
MINNESOTA REPRESENTATIVE—S. E. STRUBLE, WYOMING, MINN.

ACCIDENT • HOSPITAL • SICKNESS

INSURANCE

For Physicians, Surgeons, Dentists Exclusively

ALL PREMIUMS COME FROM — PHYSICIANS SURGEONS DENTISTS — ALL CLAIMS GO TO

$5,000 accidental death Quarterly $8.00 **$25 weekly indemnity, accident and sickness**	**$15,000 accidental death Quarterly $24.00** **$75 weekly indemnity, accident and sickness**
$10,000 accidental death Quarterly $16.00 **$50 weekly indemnity, accident and sickness**	**$20,000 accidental death Quarterly $32.00** **$100 weekly indemnity, accident and sickness**

COST HAS NEVER EXCEEDED AMOUNTS SHOWN

ALSO HOSPITAL INSURANCE

	Single	Double	Triple	Quadruple
60 days in Hospital	5.00 per day	10.00 per day	15.00 per day	20.00 per day
30 days of Nurse at Home	5.00 per day	10.00 per day	15.00 per day	20.00 per day
Laboratory Fees in Hospital	5.00	10.00	15.00	20.00
Operating Room in Hospital	10.00	20.00	30.00	40.00
Anesthetic in Hospital	10.00	20.00	30.00	40.00
X-Ray in Hospital	10.00	20.00	30.00	40.00
Medicines in Hospital	10.00	20.00	30.00	40.00
Ambulance to or from Hospital	10.00	20.00	30.00	40.00
COSTS (Quarterly)				
Adult	2.50	5.00	7.50	10.00
Child to age 19	1.50	3.00	4.50	6.00
Child over age 19	2.50	5.00	7.50	10.00

$4,000,000.00
INVESTED ASSETS

PHYSICIANS CASUALTY ASSOCIATION
PHYSICIANS HEALTH ASSOCIATION
51 years under the same management
400 First National Bank Building
Omaha 2, Nebraska

$19,500,000.00
PAID FOR CLAIMS

$200,000.00 deposited with State of Nebraska for protection of our members

HOSPITAL NEWS

Dr. Roy Hoffman, of Minneapolis, was named chief of the **Fairview Hospital**, Minneapolis, medical staff, with Dr. Donald Simonson, vice chief; Dr. Titus Bellville, secretary, and Dr. Conrad Karleen, treasurer.

The medical staff executive committee includes the officers and Dr. John Moe, Dr. Myron Lysne, Dr. William Davis, Dr. Rudolph Koucky, and Dr. Donald Frane.

* * *

St. Joseph's Hospital, Saint Paul, opened a research laboratory to study diseases of the veins and arteries, in April. Prevention as well as treatment will be among the objectives of the laboratory, the only facility of its kind in the Twin Cities for specific study of these diseases. This additional laboratory system will begin research into characteristics of the diseases, using rabbits for testing, and establish a diagnostic clinic to study the human element this summer.

The director of the animal experiments is Dr. Davitt A. Felder, instructor in surgery at the University of Minnesota, and supervisor of teaching in surgery at St. Joseph's Hospital.

The laboratory has been named the David Young Memorial Laboratory. At present it is financed by two grants: $5,000 annually is contributed by the David Young Foundation of Saint Paul, and $26,000 has been authorized by the Louis and Maud Hill Foundation through the University of Minnesota.

BLUE CROSS-BLUE SHIELD NEWS

An astounding finding resulted from a recent analysis of Blue Shield claims disallowed during the year 1952. The analysis revealed that 60 per cent of claims classified in 1952 as "rejects," either had no Blue Shield contract in effect or else involved medical service not provided by the contract. In more exact detail, 20 per cent of these so-called rejections were based upon the fact that the subscriber had no Blue Shield contract, and another 10 per cent included the reasons that the contract had been cancelled, the service was rendered before the effective date of the contract, or the patient was a nineteen-year-old dependent not covered by a family contract. Of the remaining, 25 per cent involved non-hospitalized medical care, and 5 per cent unrelated x-ray services neither of which is covered under the contract. Still another interesting feature of this study was the fact that only 9.4 per cent of claims rejected were the result of pre-existing conditions whereas this figure had been as high as 13.6 during 1951.

The significance of these figures lies in the fact that 60 per cent of so-called rejected claims are not "rejects," and with some explanation can be avoided right in the doctor's office. In fact, the use of two general procedures by the staffs of the doctors' offices will enable them to determine in the great majority of cases whether or not the claim will fall into one of the above mentioned rejection categories.

The first of these procedures is the examination of the subscriber's identification card. From this, it can readily be determined whether or not the patient or subscriber has a Blue Cross or a Blue Shield contract, or both. On the side of the card containing the subscriber's name appears a space marked "coverage." In this square usually will appear several letters and possibly also a number. If the subscriber has a Blue Cross contract the *first* letter will be either a capital "S" or "F" depending on whether the subscriber has a single or family Blue Cross contract. If the subscriber has a Blue Shield contract, the *last* letter in the series will be either a capital "S" or "F" for single or family Blue Shield coverage depending on which type of contract the subscriber holds. If the subscriber has *no* Blue Shield contract no additional "S" or "F" will appear in the square after the number. If the subscriber has only a Blue Shield contract, the letter "F" or "S" will appear thus "—S" or "—F." A similar explanation is also contained on the identification card itself.

If the subscriber has no Blue Shield contract, this should be explained to him, and in those cases where he maintains that he has Blue Shield coverage regardless of the identification card, the suggestion can be made that he clear this with the Blue Shield office before a claim is submitted.

The second general procedure involves asking the subscriber a few simple questions. As stated before, 10 per cent of the rejections involve services rendered to nineteen-year-old dependents, services prior to the contract's effective date and services rendered after the contract is cancelled. Thus, the patient should be asked his or her age if a dependent, and if he or she is over nineteen years of age, a claim should not be submitted under the parents' contract. The other two items can be covered by asking the subscriber when his contract went into effect, and whether or not he remains in good standing insofar as his premiums are concerned.

Such measures in the doctor's office will have an extremely salutary effect in reducing the amount of paper work required of the doctor and his staff. In addition to this advantage, they should help in the collection of accounts directly from the patient rather than delaying collection through first routing it to Blue Shield. And a by-product of these advantages to the physician is the avoidance of poor public relations, and misunderstandings for Blue Shield in cases where no Blue Shield contract is in effect.

Executives of the Blue Cross and Blue Shield Plans of the United States and Canada held their annual conference in Hollywood, Florida, from April 12 to 16. The conference took up matters of national policy and means by which co-ordination of activities of the various plans can be extended.

During the conference, Richard M. Jones, Chicago, Director of the Blue Cross Commission of the American Hospital Association, announced that more than 44,000,000 people are now enrolled in Blue Cross Plans. This is an all-time high for the non-profit hospitalization plans which have been approved by the American Hospital Association.

"This is nearly 28 per cent of the entire population," Jones said. "In many areas the percentage is much higher. In Minnesota alone, approximately one million subscribers and dependents are enrolled (one out of every three persons.)

More than 25,000,000 people are now enrolled in Blue Shield plans . . . 16 per cent of the entire population. In Minnesota, over a half-million persons are protected.

Guest speakers at the national conference of Blue Cross and Blue Shield plans included Admiral W. J. P. Blandy, U.S.N., Ret., president of the Health Information foundation, New York, who spoke on "Assisting the Cause of Voluntary Health Insurance," and Artemas C. Leslie, Pennyslvania Insurance Commissioner, whose talk was entitled, "An Insurance Commissioner Looks at Blue Cross and Blue Shield."

Other guest speakers included David J. McDonald, Pittsburgh, president, United Steelworkers of America, CIO, and A. R. Mathieson, Pittsburgh, United States Steel and Carnegie Pension Fund, who discussed, respectively, the stake of labor and management in health care. More than 1,500,000 workers and dependents in the steel industry are enrolled in Blue Cross . . . among the largest enrollments within any one industrial group.

Ulmer
PHARMACAL COMPANY
1400 Harmon Place
Minneapolis 3, Minnesota

Send for new brochure M-553a
P-B-SAL-C with COLCHICINE "ULMER"
Effective Arthritic Therapy

PATTERSON SURGICAL SUPPLY COMPANY
130 W. Seventh Street, St. Paul 2, Minn.
HOSPITAL AND PHYSICIANS SUPPLIES AND EQUIPMENT
Cedar 1781-82-83

BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical Libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

BOOKS RECEIVED FOR REVIEW

THE WECHSLER-BELLEVUE SCALES—A Guide for Counselors. C. H. Patterson, Veterans Administration Center, Fort Snelling, Saint Paul, Minnesota. 139 pages. Price $3.75, flexible binding. Springfield, Illinois: Charles C Thomas, 1953.

DIAGNOSTIC TESTS IN NEUROLOGY. A Selection for Office Use. Robert Wartenberg, M.D. Forewords by Sir Gordon Holmes, M.D., F.R.S., and Stanley Truman, M.D. 228 pages. Illus. Price $4.50, cloth. Chicago: Year Book Publishers, 1953.

BCG VACCINATION. Report prepared under the direction of Lydia B. Edwards, M.D., Chief of Field Studies, and Carroll E. Palmer, M.D., Ph.D., Director, WHO Tuberculosis Research Office, Copenhagen. 307 pages. Illus. Price $3.00, paper cover. New York: Columbia University Press, 1953.

THE OCULOROTARY MUSCLES. By the late Richard G. Scobee, B.A., M.D., F.A.C.S. Second Edition. 512 Pages. Illus. Price $11.00. St. Louis: Mosby, 1952.

This edition has 502 pages and 159 illustrations, compared to 352 pages and 112 illustrations of the first edition.

Many of the sections, notably those dealing with physiology, have been rewritten with more detail added. The functional and surgical anatomy sections have been enlarged as well as those on hyperphoria and exophoria.

The section on therapy is rewritten to cover more specific problems, and a long awaited chapter discussing reasons for failure in tropia surgery has proven to be one of the main attractions of this new edition.

William J. Hultgen, M.D.

CLINICAL ELECTROCARDIOGRAPHY. By Francis F. Rosenbaum, M.D. Edited by Henry A. Christian, M.D. 206 pages. Illus. Price $4.50. New York: Oxford University Press, 1950.

Clinical Electrocardiography by Francis F. Rosenbaum, M.D., published by the Oxford University Press in 1950, and appearing as reprinted from Oxford Loose-Leaf Medicine with the same page numbers as in that work, is a succinct and clear exposition of modern cardiographic procedure.

Unipolar precordial leads and unipolar limb leads are discussed, the latter in Wilson's terminology, not that of Goldberger. The discussion of the mean electrical axis is very good, and the diagrams shown in Figure 51 are particularly apt.

The discussion of myocardial infarction is adequate, particularly the section headed "Myocardial Infarction Complicated by Bundle Branch Block or Arborization Block."

The discussion of the anomalous atrioventricular ex-

WHERE ALCOHOLICS ACHIEVE INSPIRATION FOR RECOVERY

Where gracious living, a homelike atmosphere and understanding companionship contribute to successful rehabilitation.

200 acres on the shores of beautiful Lake Chisago

The methods of treatment used at the Hazelden Foundation are based on a true understanding of the problem of alcoholism. Among the founders of the nonprofit Hazelden Foundation are men who have recovered from alcoholism through the proved program of Alcoholics Anonymous and who know the problems of the alcoholic. All inquiries will be kept confidential.

HAZELDEN FOUNDATION

Lake Chisago, Center City, Minn. Telephone 83

citation (Wolff-Parkinson-White Syndrome) is particularly good in its description of the cardiographic deflections. Unfortunately, the upper and lower limits, in seconds, occurring in this condition are not given.

Finally, there is a very satisfying discussion of heart block, extrasystolic arrhythmias, and paroxysmal tachycardia.

The entire book is well-executed and should be in every cardiologist's library. The points discussed above were handled in a way that particularly appealed to the reviewer.

Edgar T. Herrmann, M.D.

DOCTOR IN THE HOUSE. By Richard Gordon. 186 pages. Price $2.75. New York: Harcourt, Brace and Company, ©1953.

Partly with affection, but mostly with good-natured banter, a London doctor casts in the form of a fictional narrative the life and struggle of an English medical student. In a steady flow of wit, he describes the medical student's introduction to classes and King George's pub, and he follows his school life through to the final examinations and the subsequent attainment of a medical degree.

In order to grasp and portray so cleverly the lively sketches of his fellow students and associates, Richard Gordon has drawn heavily on his imagination, yet his anecdotal style makes the impossible almost believable.

Although this book is written for general publication, and lacks highly technical language, the humorous tone, medical word-play, and ludicrous similes (the Chief Surgeon is described as a "therapeutic thunderbolt" who could "slit a Christmas turkey to ribbons in a couple of minutes"), makes this amusing reading for anyone in the medical field, as well as the laity.

Betty R. Ward, M.T.

CEREBRAL PALSY

Cerebral palsy, a crippling disorder handicapping more than 550,000 U. S. children and adults, received wider medical attention during 1952 than ever before, Dr. Charles F. McKhann, medical director of the United Cerebral Palsy Association, New York, reports in the section on cerebral palsy prepared for the new edition of the American Peoples Encyclopedia Yearbook which will be published soon. Although no general preventive or cure for the condition has been found, important progress in the treatment and rehabilitation of cerebral palsied persons has been made, Dr. McKhann asserts.

COMPLETE
OPHTHALMIC
SERVICE
FOR THE
PROFESSION

Complete Laboratories in Minneapolis and Principal Cities of Upper Midwest

EXECUTIVE OFFICES
MINNEAPOLIS, MINN.

SINCE 1913

Benson
OPTICAL COMPANY

Cook County Graduate School of Medicine

POSTGRADUATE COURSES—1953

- SURGERY—Intensive Course in Surgical Technic, two weeks, starting May 11, June 1, June 15
  - Surgical Technic, Surgical Anatomy and Clinical Surgery, four weeks, starting June 1
  - Surgical Anatomy and Clinical Surgery, two weeks, starting June 15, August 17
  - Gallbladder Surgery, ten hours, starting June 29
  - Surgery of Colon and Rectum, one week, starting May 11
  - General Surgery, two weeks, October 12
  - Thoracic Surgery, one week, starting June 8
  - Breast and Thyroid Surgery, one week, starting June 22
  - Esophageal Surgery, one week, starting June 22
  - Fractures and Traumatic Surgery, two weeks, starting June 15
- GYNECOLOGY—Intensive Course, two weeks, starting June 15
  - Vaginal Approach to Pelvic Surgery, one week, starting June 8
- OBSTETRICS—Intensive Course, two weeks, starting June 8
- PEDIATRICS—Congenital Heart Disease, two weeks, starting May 18
  - Cerebral Palsy, two weeks, starting June 15
- MEDICINE—Gastroenterology, two weeks, starting May 18
  - Electrocardiography and Heart Disease, two weeks, starting July 13
  - Allergy, one month and six months, by appointment
- CYSTOSCOPY—Ten-day Practical Course starting every two weeks
- DERMATOLOGY—Intensive Course, two weeks, starting May 11

TEACHING FACULTY—ATTENDING STAFF OF COOK COUNTY HOSPITAL

ADDRESS: REGISTRAR, 707 South Wood Street, Chicago 12, Illinois

RADIUM & RADIUM D+E

(Including Radium Applicators)

FOR ALL MEDICAL PURPOSES

Est. 1919

Quincy X-Ray and Radium Laboratories

(Owned and Directed by a Physician-Radiologist)

Harold Swanberg, B.S., M.D., Director
W.C.U. Bldg. Quincy, Illinois

Hall, Anderson & Nordehn

PRESCRIPTION PHARMACY
BIOLOGICALS
PHYSICIANS' SUPPLIES

SAINT PAUL, MINN.

LOWRY MEDICAL ARTS BUILDING
TELEPHONE: CEDAR 2735

STOP . . .

BEFORE YOU BUY
YOUR NEW CAR—
SEE US . . .

we can save you money on the finance charge.

AMERICAN NATIONAL BANK
OF SAINT PAUL

Bremer Arcade Robert at 7th CE 6666

Member Federal Deposit Insurance Corporation

DANIELSON MEDICAL ARTS PHARMACY, INC.

10-14 Arcade, Medical Arts Building
825 Nicollet Avenue—Two Entrances—78 South Ninth Street
MINNEAPOLIS

PHONES:
ATLANTIC 3317
ATLANTIC 3318

HOURS:
WEEK DAYS—8 to 7
SUN. AND HOL.—10 TO 1

Index to Advertisers

Abbott Laboratories 442, 450, 451
Aloe, A. S., Co. 557
American Meat Institute 440
American National Bank 565
Anderson, C. F., Co., Inc. 552
Ar-Ex Cosmetics 565
Ayerst, McKenna & Harrison 444

Bayer Co. 446
Benson Optical Co. 564
Birches Sanitarium, Inc. 554
Brown & Day, Inc. 549
Buchstein-Medcalf Co. 549

Canfield, C. R., & Co. 438, 439
Caswell-Ross Agency 434
Classified Advertising 566
Cook County Graduate School of Medicine 564
Crestview Hospital 555

Dahl, Joseph E., Co. 558
Danielson Medical Arts Pharmacy, Inc. 565
Druggists Mutual Insurance Co. 560

Ewald Bros. .... Inside Back Cover

Glenwood Hills Hospitals 567

Hall, Anderson & Nordehn 565
Hazelden Foundation 563
Homewood Hospital 556

Juran & Moody 551

Knox Gelatine 553

Lederle Laboratories .... Facing page 448
Lilly, Eli, & Co. .... Front cover, 456

Mead Johnson & Co. 568
Medical Protective Co. 558
Merck & Co., Inc. 437
Milwaukee Sanitarium .... Back Cover
Mounds Park Hospital .... Back Cover

North Shore Health Resort 559

Parke, Davis & Co. .... Inside front cover, 433
Patterson Surgical Supply Co. 562
Pfizer, Chas., & Co. 445
Philip Morris & Co. 454
Physicians Casualty Association 561
Physicians & Hospitals Supply Co. 448, 560
Professional Credit Protective Bureau 443

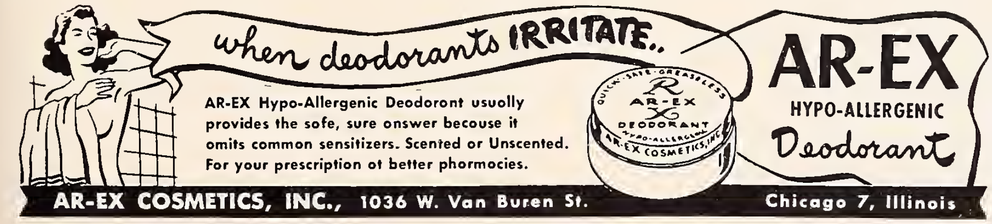
Quincy X-Ray & Radium Laboratories 564

Radium Rental Service 566

St. Croixdale Sanitarium 436
Schering Corporation 449
Searle, G. D., & Co. 547

Ulmer Pharmacal Co. 562
Upjohn 441

Walker, Archie, Jr., Imported Motors 452
Wander Co. 453
Winthrop-Stearns, Inc. 455
Wyeth 447



when deodorants IRRITATE..

AR-EX Hypo-Allergenic Deodorant usually provides the safe, sure answer because it omits common sensitizers. Scented or Unscented. For your prescription at better pharmacies.

AR-EX
HYPO-ALLERGENIC
Deodorant

AR-EX COSMETICS, INC., 1036 W. Van Buren St. Chicago 7, Illinois

IN COSMETIC
Allergy
AR-EX
HYPO-ALLERGENIC
Cosmetics

Classified Advertising

Replies to advertisements with key numbers should be mailed in care of MINNESOTA MEDICINE, *2642 University Avenue, Saint Paul 14, Minn.*

FOR RENT—Attractive doctor's suite in south Minneapolis. Wonderful location for a practice to be built up, or as an outlying office for a downtown doctor. Write Wm. L. Cochrane, 7301 Fremont Avenue South, Minneapolis 19, Minnesota. Telephone RO 9-8758.

WANTED—Physician to replace two physicians who are returning to Military Service. Northwestern Minnesota rural community. Address E-363, care MINNESOTA MEDICINE.

WANTED—General practitioner to replace doctor called into service. Newly remodeled clinic in town of 500 with large territory. Salary $8,000 to $10,000. Address E-364, care MINNESOTA MEDICINE.

GENERAL PRACTITIONER WANTED—To take over established practice in Lowry Medical Arts Building, Saint Paul. Excellent opportunity for man with country practice desiring to locate in city. Will introduce. Address E-365, care MINNESOTA MEDICINE.

ASSOCIATE WANTED—In private practice of Neurology and Psychiatry in Saint Paul. Specialty training not required. Salary open. Address E-362, care MINNESOTA MEDICINE.

WILL DONATE complete Westinghouse x-ray equipment and Basal Metabolism machine for shipment charges. Retired physician. Address E-361, MINNESOTA MEDICINE.

PHYSICIAN WANTED FOR LOCUM TENENS—July and August and possibly September. Near Minneapolis. Excellent salary. Call 162—Osseo. Drs. Bloedel and Ransom, Osseo, Minnesota.

OFFICES FOR RENT—For physicians and surgeons. Occupied by prominent physicians for past 25 years. Call Humboldt 9-1748 Rice Street, Saint Paul 3, Minnesota.

FOR SALE—Radiographic-Fluoroscopic X-ray unit, including accessory and darkroom items complete. Consists of Mattern 60 MA, @90 K.V. generator with hand rocked tilting table, Bucky diaphragm and fluoroscopic screen assembly. For complete listing, write C. R. Holland, M.D., 422 Second Avenue Southwest, Rochester, Minnesota.

WANTED—General practitioner to join five-man clinic caring for a mining company's employes and families. Includes general practice, obstetrics, surgery and industrial work. Good salary, all equipment and car furnished. Living conditions and schools excellent. Location—Black Hills. Immediate opening. Address E-355, care MINNESOTA MEDICINE.

WANTED—Young associate in busy general practice. Completely modern clinic building, new equipment. New 20-bed hospital, one block from clinic. Salary open. Address E-357, care MINNESOTA MEDICINE.

PLACEMENT SERVICE

The Minnesota State Medical Association maintains a Medical Placement Service for the benefit of physicians who are looking for locations and positions; also for communities, medical groups and physicians who are looking for licensed medical assistance. For information, write to the Minnesota State Medical Association, 496 Lowry Medical Arts Bldg., Saint Paul 2, Minnesota.

WANTED—Three General Practitioners for three unopposed excellent locations in rich farming communities. Each should gross $20,000.00 in first year. Will assist in obtaining all office equipment; absolutely no strings attached. Hospital facilities excellent. Will hold locations open until July 1, if desired. Write Herbert A. Hartfield, M.D., 117½ South Main Street, Montevideo, Minnesota.

EXCELLENT OPPORTUNITY—For eye, ear, nose and throat man in Southern Minnesota Clinic. Address E-360, care MINNESOTA MEDICINE.

WANTED—Young physician as assistant or to buy a very large general practice—25 miles from Saint Paul. Complete equipment. Address E-358, care MINNESOTA MEDICINE.

WANTED—Physician interested in general practice in suburb of Twin Cities. Ground floor office, well equipped; hospital facilities available. Permanent association for right man. Address E-366, care MINNESOTA MEDICINE.

FOR SALE—EEN&T practice in the Twin Cities (Minneapolis and Saint Paul). Equipment, if desired. Address E-368, care MINNESOTA MEDICINE.

LABORATORY AND X-RAY TECHNICIAN required for a two-doctor clinic. Equipment and working conditions excellent. Salary open. Address E-367, care MINNESOTA MEDICINE.

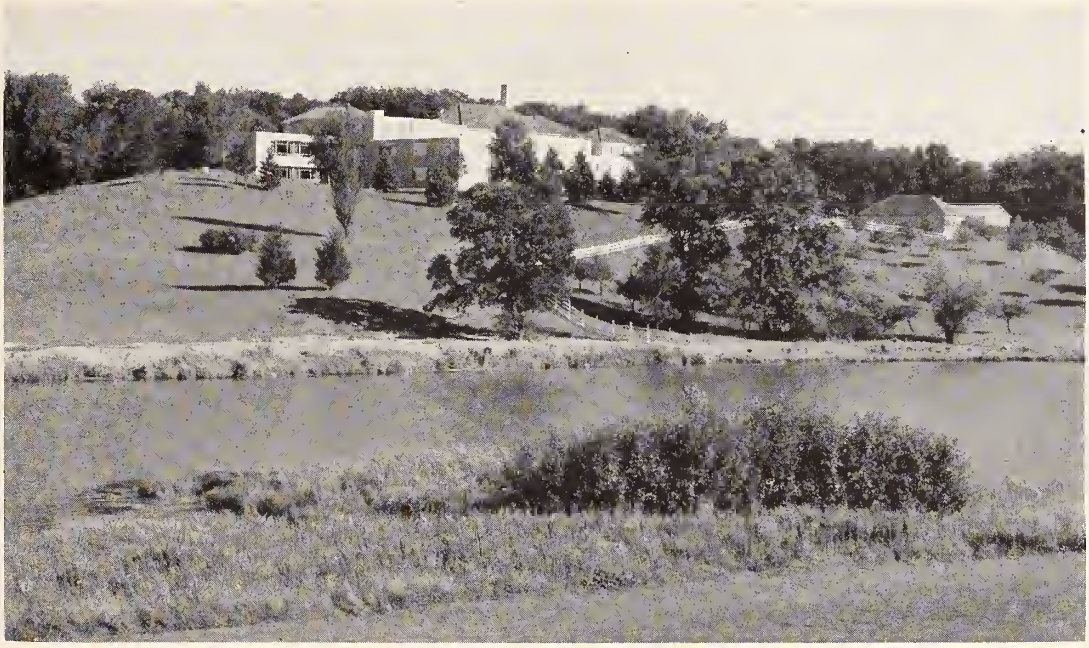
RADIUM RENTAL SERVICE
4340 W. 24TH STREET
MINNEAPOLIS 5, MINNESOTA
TEL. ATLANTIC 5297

Radium element prepared in type of applicator requested

ORDER BY TELEPHONE OR MAIL
PRICES ON REQUEST

DOCTOR . . . *This is Your Hospital and Your School of Neuropsychiatric Nursing*

(By that we mean that not only have these institutions undertaken to constitute a haven of help for patients, but they form, in your interest a *remarkable facility for you professionally.)*



View of hospital, school, buildings and environs, 7 minutes from downtown Minneapolis

A COMPLETE NEURO-PSYCHIATRIC HOSPITAL

Up-to-date in all respects, new, functional buildings, set in spacious grounds, rehabilitation center, electroencephalography, therapies, laboratory. One of the largest neuro-psychiatric staffs in the United States. A voluntary, non-profit, non-sectarian institution of which this region may be proud.

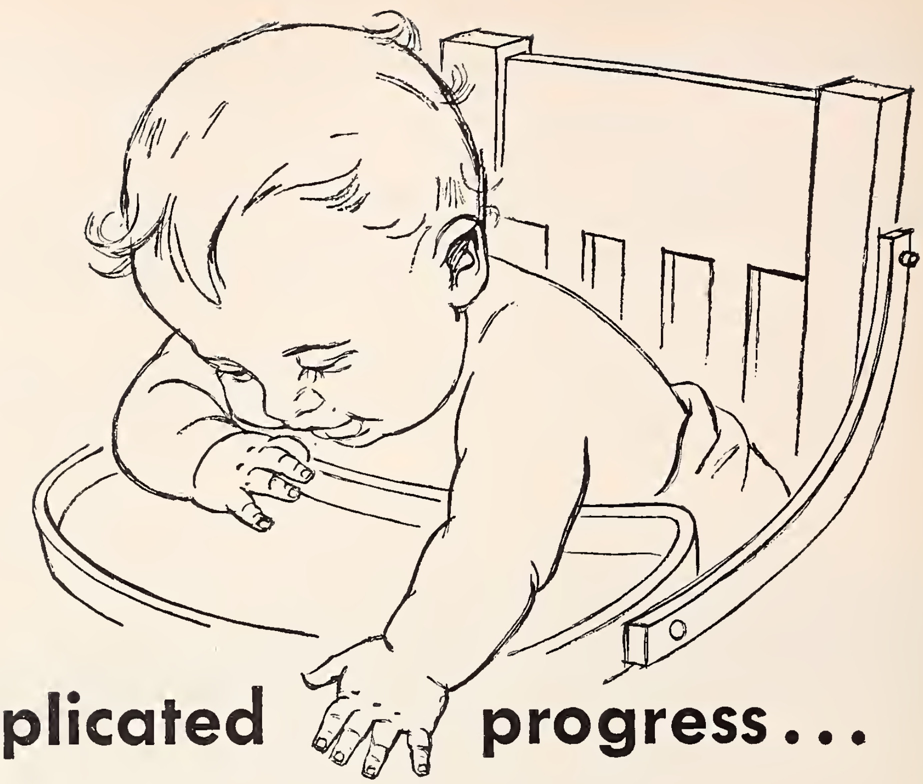
SCHOOL FOR NEURO-PSYCHIATRIC NURSING

To offset the existing universal shortage of nurses, Glenwood Hills conducts a one-year course in neuro-psychiatric nursing. You have observed the skill and attitudes of our graduates and trainees. Recruit one or two in behalf of your profession as a "contribution" stipulating that we send them back to you when trained. We will. Meanwhile tuition, room and board are free.

Glenwood Hills Neuro-psychiatric *Hospital*
School of Neuro-psychiatric *Nursing*

3901 Golden Valley Road, Minneapolis 22, Minnesota JUniper 2771

Helen Swenson Rascop, Director of Nurses



uncomplicated progress...

Tolerance of feedings	good
Incidence of digestive disturbances	low
Growth response	Satisfactory
Discontinuation of night feeding	early
Health and development	excellent

The uncomplicated nutritional progress[1] of infants fed Lactum® speaks for its sound rationale. Lactum is Mead's liquid formula made from whole milk and Dextri-Maltose.® It provides generous milk protein for sturdy growth and sound tissue structure, with sufficient calories to spare protein and meet the infant's energy needs.

Lactum is convenient and easy to prepare—simply mix equal parts of Lactum and water for a formula supplying 20 calories per fluid ounce.

1. Frost, L. H., and Jackson, R. L.: J. Pediat. 39: 585-592, 1951.

Lactum
LIQUID FORMULA FOR INFANTS
(Modified Milk)
MEAD
MEAD JOHNSON & COMPANY
Evansville, Indiana, U.S.A.

Lactum

MEAD

MEAD JOHNSON & COMPANY
Evansville 21, Ind., U.S.A.

Whenever antihistaminic therapy is needed to prevent or relieve allergic symptoms, prescription of BENADRYL Hydrochloride (diphenhydramine hydrochloride, Parke-Davis) has become a customary procedure in the daily practice of many physicians. Because relief is rapidly obtained and gratifyingly prolonged, many thousands of patients have been spared the usual discomforts of hay fever, vasomotor rhinitis, acute and chronic urticaria, angio-neurotic edema, pruritic dermatoses, contact dermatitis, serum sickness, food allergy, and sensitization to penicillin and other drugs.

Parke, Davis & Company
DETROIT, MICHIGAN

Look at Your Income This Way

You can't lock it up in a vault to protect it. Yet it is more important than any personal property that you may own, and if anything should happen to it, you would stand to lose plenty.

It is logical that this plan of your Association, using its buying power, can do more for you than any individually purchased policy. Mute testimony for that point is the many professional organizations that have investigated and tested this special plan of disability insurance.

You can't eat accident and sickness insurance, but it will certainly keep you from starving.

DELAY offers no advantage—CALL US NOW!

CR
AGENCY
Minneapolis

CASWELL-ROSS AGENCY

1177 N. W. Bank Building
Minneapolis 2, Minnesota
Minneapolis—MA 2585
St. Paul—ZE 2341

Insurors to:

Minnesota State Bar Association
Minnesota State Dental Association
Minnesota State Medical Association
Minnesota Society of C. P. A.
Minnesota State Pharmaceutical Assn.
Minnesota Auto Dealers Association
Minnesota Federation of Eng. Societies
Minnesota State Veterinary Medical Soc.
Hennepin County Medical Society
Hennepin County Bar Association
11th Judicial Bar Association
Minneapolis Association of Life Underwriters
Ramsey County Medical Society
Ramsey County Bar Association
St. Paul District Dental Soc.
Minneapolis District Dental Soc.
St. Cloud Dental and Stearns County Medical Society
Duluth District Dental Society
East Central Medical Society
St. Louis County Medical Society
West Central Dist. Dental Society
Northwest Proprietors Association
St. Paul Life Underwriters, Inc.

Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 36 **June, 1953** **Number 6**

Contents

THE FUTURE OF THE MEDICAL SCHOOL OF THE UNIVERSITY OF MINNESOTA.
E. T. Bell, M.D., Minneapolis, Minnesota....... 589

PATIENTS' IMPRESSIONS OF A COMMUNITY MENTAL HEALTH CENTER.
Charles Kram, Ph.D., and *N. J. Berkwitz, M.D.,* Albert Lea, Minnesota...................... 591

PRIMARY NEOPLASMS OF THE LUNG.
De Forest R. Hastings, M.D., F.A.C.P., Minneapolis, Minnesota........................... 594

THE CLINICAL DIAGNOSIS OF SOME BULLOUS DERMATOSES.
Carl W. Laymon, M.D., Minneapolis, Minnesota 598

DERMO-FUNGOUS ALLERGY.
Harold G. Ravits, M.D., Saint Paul, Minnesota.. 602

INFECTIONS OF THE URINARY TRACT.
Edward N. Cook, M.D., Rochester, Minnesota.. 605

MINNESOTA MATERNAL MORTALITY STUDY.
By the Maternal Mortality Committee of the Committee on Maternal Health of the Minnesota State Medical Association.............. 609

LABORATORY AIDS TO MEDICAL PRACTICE.
Tests for Cancer............................. 623

CASE REPORT:

Dissecting Aneurysm of the Aorta with Neurological Complications.
Edwin G. Benjamin, M.D., Albert J. Greenberg, M.D., and *Andrew J. Leemhuis, M.D.,* Minneapolis, Minnesota 625

HISTORY OF MEDICINE IN MINNESOTA:

Medical History of the County of Yellow Medicine.
Mildred B. Lee, Granite Falls, Minnesota...... 627

PRESIDENT'S LETTER:

A Difficult Decision........................... 635

EDITORIAL:

The State Meeting............................ 636
Influenza and Pneumonia..................... 637
The Dean's Page............................. 638
World Medical Association................... 638

MINNESOTA DEPARTMENT OF HEALTH:

Reporting of all Deaths Due to or Associated with Pregnancy 639

THE DEAN'S PAGE............................ 640

MEDICAL ECONOMICS:

Association Dues Are Comparatively Small..... 641
Social Security Survey Termed Hard Task.... 641
Figures Show Increase in Lives Saved......... 642

REPORTS AND ANNOUNCEMENTS.................. 644
WOMAN'S AUXILIARY.......................... 648
IN MEMORIAM................................ 650
OF GENERAL INTEREST........................ 654
BOOK REVIEWS............................... 667

Contents of MINNESOTA MEDICINE copyrighted by Minnesota State Medical Association, 1953

Entered at the Post Office in Saint Paul as second class mail matter. Accepted for mailing at the special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 13, 1918.

MINNESOTA MEDICINE

Official Journal of the Minnesota State Medical Association

Published by the Association under the direction of its Editing and Publishing Committee

Office of Minnesota State Medical Association,
496 Lowry Medical Arts Bldg., Saint Paul 2, Minnesota.

EDITING AND PUBLISHING COMMITTEE

E. M. Hammes, Saint Paul	T. A. Peppard, Minneapolis
Philip F. Donohue, Saint Paul	H. A. Roust, Montevideo
L. M. Eaton, Rochester	O. W. Rowe, Duluth
J. J. Heimark, Fairmont	Henry L. Ulrich, Minneapolis
C. L. Oppegaard, Crookston	A. H. Wells, Duluth

EDITORIAL STAFF

Carl B. Drake, Saint Paul, Editor
George Earl, Saint Paul, Associate Editor
Henry L. Ulrich, Minneapolis, Associate Editor

BUSINESS MANAGER
J. R. Bruce

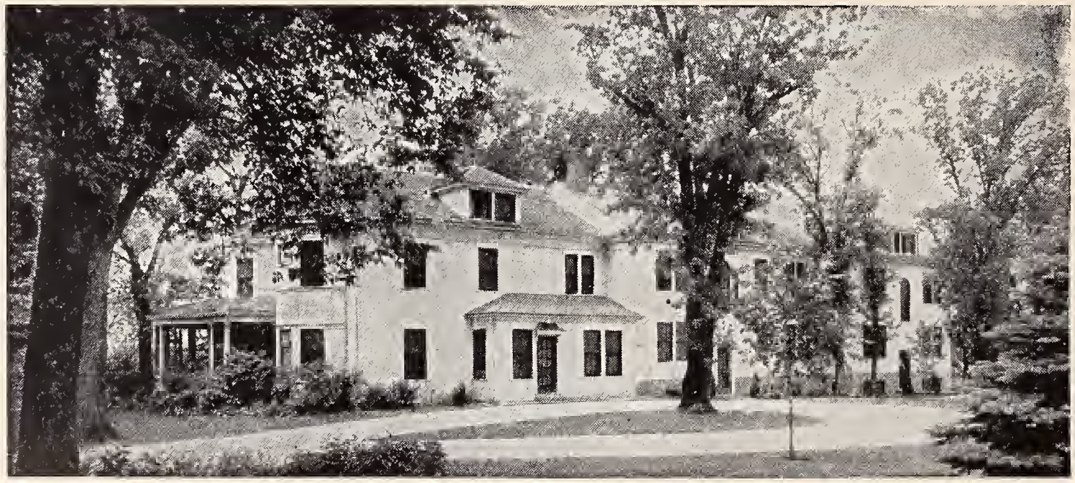
Annual Subscription—$3.00. Single Copies—$0.40. Foreign and Canadian Subscriptions—$3.50.

The right is reserved to reject material submitted for editorial or advertising columns. The Editing and Publishing Committee does not hold itself responsible for views expressed either in editorials or other articles when signed by the author.

Classified advertising—ten cents a word; minimum charge, $2.00; key number, 25c additional. Remittance should accompany order.

Display advertising rates on request.

Address all communications concerning the journal to Minnesota Medicine, 2642 University Avenue, Saint Paul 14, Minnesota. Telephone Nestor 2641.



A MODERN PRIVATE SANITARIUM

for the Diagnosis, Care and Treatment of Nervous and Mental Disorders

MAIN BUILDING—One of 10 Units in "Cottage Plan"

ST. CROIXDALE ON LAKE ST. CROIX

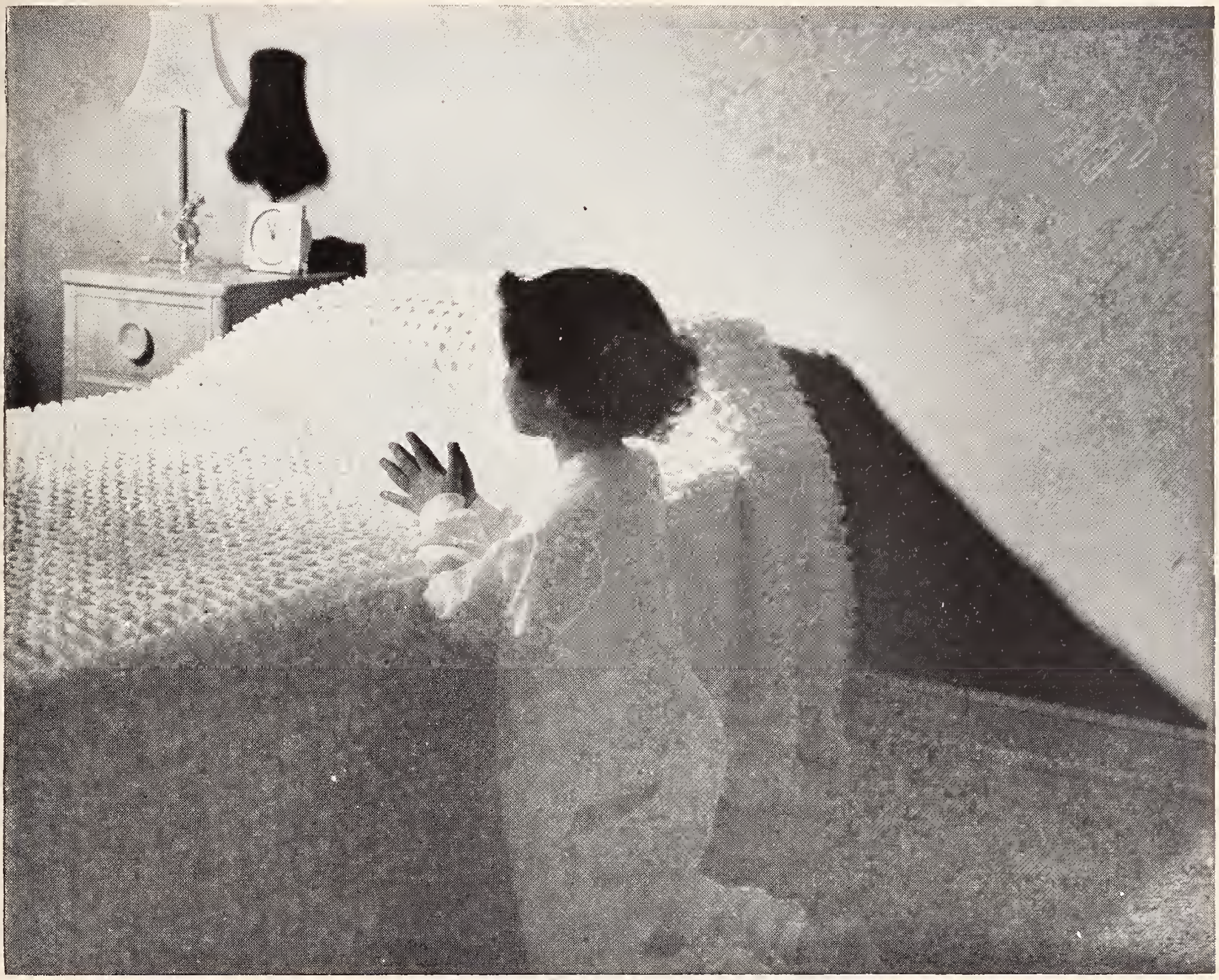
PRESCOTT, WISCONSIN

Located on beautiful Lake St. Croix, 18 miles from the Twin Cities, it has the advantages of both City and Country. Every facility for treatment provided, including recreational activities and occupational-therapy under trained personnel. Close personal supervision given patients, and modern methods of therapy employed. Inspection and cooperation by reputable physicians invited. Rates very reasonable. Illustrated folder on request.

Prescott Office
Prescott, Wisconsin
Howard J. Laney, M.D.
Tel. 39 and Res., 76

Consulting Neuro-Psychiatrists
Hewitt B. Hannah, M.D., Andrew J. Leemhuis, M.D.
527 Medical Arts Bldg., Tel. MAin 1357, Minneapolis, Minn.

Superintendent
Ella M. Leseman
Prescott, Wisconsin
Tel. 69



". . . and please get people to pay what they owe Daddy. Mommy says that's why he's so cross."

Are you burdened by a heap of uncollected accounts? The Professional Credit Protective Bureau can really help you.

The Professional Credit Protective Bureau is collecting thousands of past due accounts in the professional field.

The Professional Credit Protective Bureau is a credit control organization that sees that the patient pays direct to the supplier of services. In other words you PAY THE COLLECTION ORGANIZATION AFTER YOUR PATIENT HAS PAID YOU and neither you nor the debtor is embarrassed.

Ninety-two leading trade associations . . . including many medical and dental organizations . . . are recommending this credit control system as part of their service to members.

It will pay you to investigate this tried and true system. Use the attached coupon.

Professional Credit Protective Bureau
724 Metropolitan Bldg., Dept. MM 6-53
Minneapolis 1, Minn.

Please send me full details on the operation of your collection service.

Name ....

Address ....

City .... State ....

Division of

The I.C. System

724 Metropolitan Bldg.
Minneapolis 1, Minn.

When organisms resist the other

antibiotics . . .

USE ERYTHROCIN*

. . . especially effective against gram-positive organisms including those resistant to penicillin and the other antibiotics.

USE ERYTHROCIN*

. . . has low toxicity; orally effective against infections caused by staphylococci, streptococci and pneumococci.

USE ERYTHROCIN*

. . . indicated in pharyngitis, tonsillitis, scarlet fever, pneumonia, erysipelas, osteomyelitis and pyoderma.

USE ERYTHROCIN*

. . . gastrointestinal disturbances mild and relatively rare; no serious side effects reported.

USE ERYTHROCIN*

. . . fully potent; average adult daily dose 0.8 to 2.0 Gm., depending on type, severity of infection.

USE ERYTHROCIN*

. . . special absorption-favoring coating; 0.1 Gm. (100 mg.) tablets supplied in bottles of 25 and 100. Abbott

*Trade Mark for
ERYTHROMYCIN, ABBOTT*

1-178

If YOU *fell victim to a*

CORONARY, PARALYSIS OR ANY TOTAL DISABILITY

What type of INCOME PROTECTION *would you want?*

You would want the most up-to-date Comprehensive Contract Available to the Executive, Business or Professional Man.

You Might Require . . .

$1,000.00 Monthly while Hospital confined
400.00 Monthly Benefit first five years and
300.00 thereafter, even for life.

You Would Want . . . if You Can Qualify . . .

Lifetime Benefits for both Accidents and Sickness

Full Benefits Payable for Life for disability occurring before 60

Non-Confining Sick Benefit for 5 Years—Non-aggregate

Lifetime Protection—contract does not terminate at any age

Benefits from First Day with minimum claim 7 days

No Increase in Premium regardless of your attained age

Lifetime Income for Accidental Loss of sight, hands or feet

Waiver of Premium Payment after 6 months of total disability

A policy that cannot be restricted to exclude any disease or injury originating after the policy is issued

Renewal of policy guaranteed so long as you are active in your work, pay premiums according to the contract, and the plan remains in effect

Available in units up to $600 per month for men under 59 WHO CAN QUALIFY. Attractive programs also available to men age 75 and under.

The New Silent Partner Program

BOYD & BOYD, INC.
30 EAST ADAMS • CHICAGO, ILLINOIS
UNDERWRITTEN BY CONTINENTAL CASUALTY COMPANY

read Pfizer Spectrum weekly in the J.A.M.A

to control fulminating sepsis

Intravenous Terramycin therapy in over 100 cases of surgical sepsis following operations of the thorax, abdomen or limbs gave "none but the most favorable results. The well-known side-effects in connection with orally administered antibiotics . . . were never found to occur, nor did we at any time observe any other toxic reactions."

Deucher, F.: Schweiz. med. Wchnschr. *82*:1 (Jan. 5) 1952.

broad-spectrum

Terramycin Intravenous

BRAND OF OXYTETRACYCLINE HYDROCHLORIDE

well-tolerated

in infants and children

"Our experience with Terramycin by the intravenous route has been good. It has been effectively used without difficulty by continuous drip infusion for several days in the smallest infant . . ."

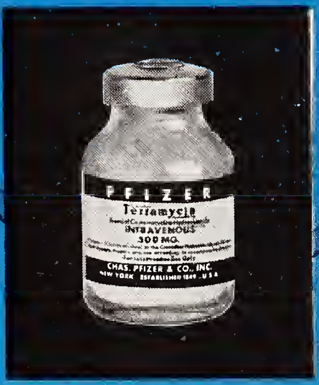
Farley, W. J., Konieczny, L.: J. Pediat. *42*:177 (Feb.) 1953.

as well as adult patients

Intravenous Terramycin, followed by oral therapy after 3-5 days, "is a singly effective, superior antibiotic in the treatment of peritonitis and . . . a good result can frequently be obtained with this drug when [other antibiotics] have failed. It thus has great usefulness both as a primary therapeutic agent and as an alternate antibiotic."

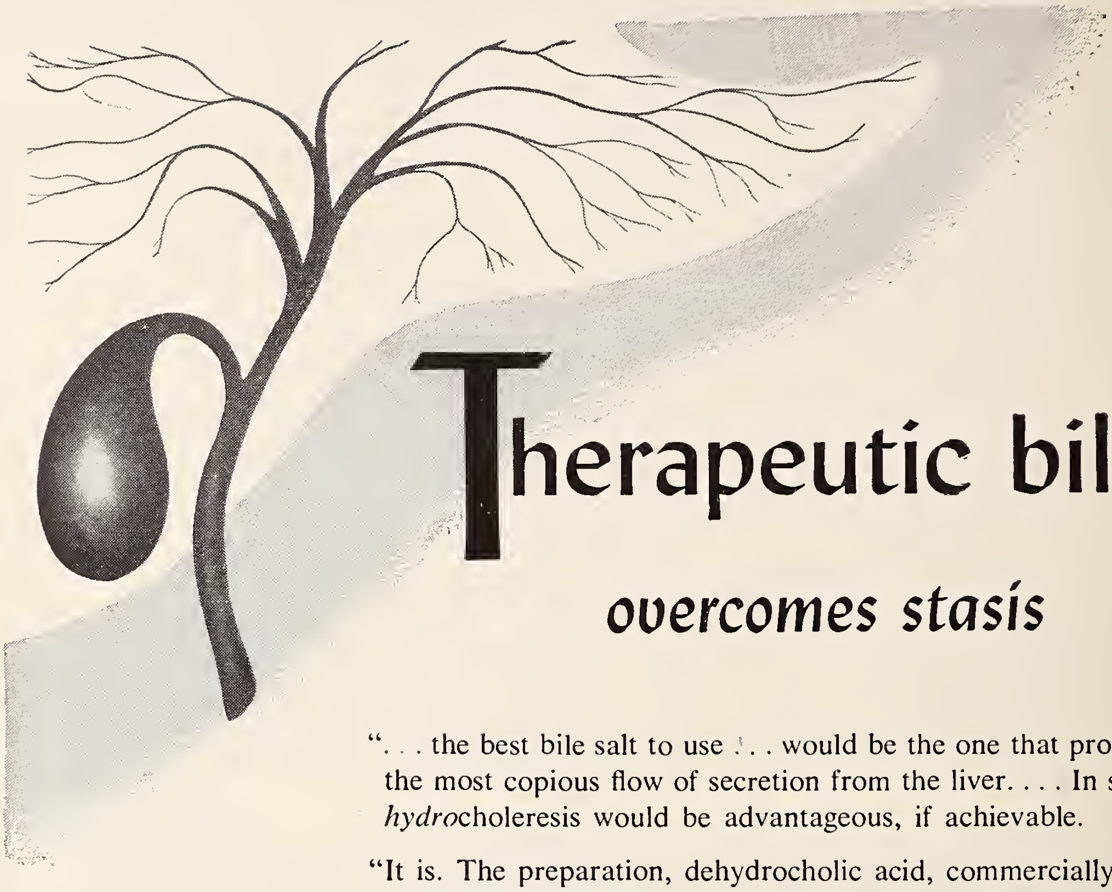
Reiss, E., et al.: A. M. A. Arch. Surg. *64*:5 (Jan.) 1952.

Vials of 250 mg. and 500 mg.



Pfizer

Antibiotic Division
Chas. Pfizer & Co., Inc.
Brooklyn 6, N. Y.



Therapeutic bile

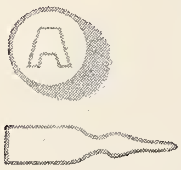
overcomes stasis

"... the best bile salt to use ... would be the one that produced the most copious flow of secretion from the liver. ... In short, *hydro*choleresis would be advantageous, if achievable.

"It is. The preparation, dehydrocholic acid, commercially available as Decholin ... does considerably increase the volume output of a bile of relatively high water content and low viscosity. The drug is not a cholagogue, i.e., it does not promote evacuation of the gallbladder, but it is a good 'flusher'."*

Decholin®

dehydrocholic acid, Ames



*Hydro*choleresis with *Decholin* produces abundant, thin, free-flowing bile—"therapeutic bile." This flushes thickened bile, mucus plugs and debris from the biliary tract.

Decholin Tablets, 3¾ gr. (0.25 Gm.), bottles of 100, 500, 1000 and 5000.

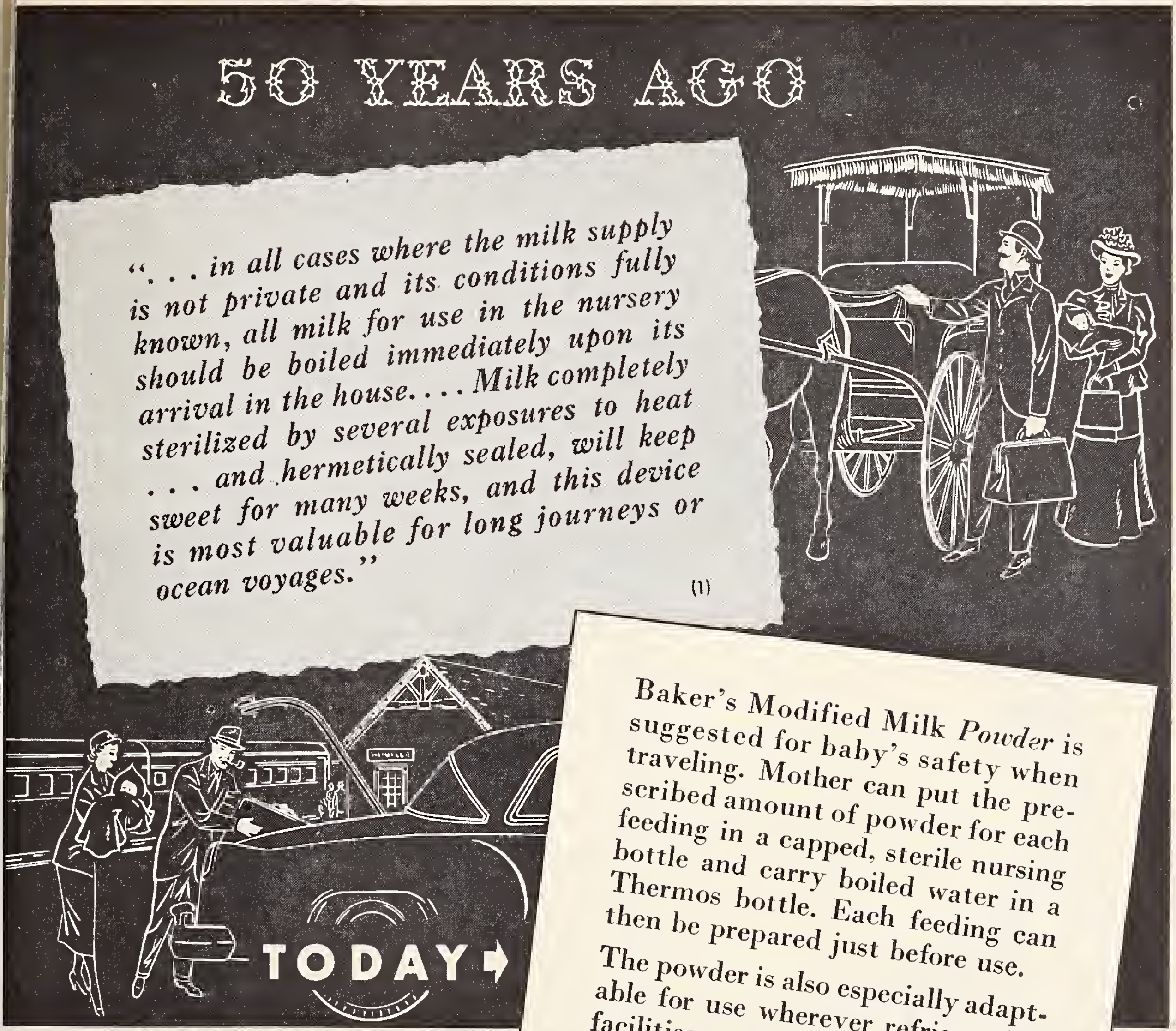
Decholin Sodium (sodium dehydrocholate, *Ames*) 20% aqueous solution, ampuls of 3 cc., 5 cc., and 10 cc.

*Beckman, H.: Pharmacology in Clinical Practice, Philadelphia, W. B. Saunders Company, 1952, p. 361.

Decholin and *Decholin Sodium*, trademarks reg.

AMES
COMPANY, INC., ELKHART, INDIANA
Ames Company of Canada, Ltd., Toronto

46753

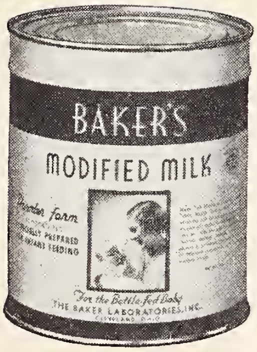


50 YEARS AGO

". . . in all cases where the milk supply is not private and its conditions fully known, all milk for use in the nursery should be boiled immediately upon its arrival in the house. . . . Milk completely sterilized by several exposures to heat . . . and hermetically sealed, will keep sweet for many weeks, and this device is most valuable for long journeys or ocean voyages." (1)

Baker's Modified Milk *Powder* is suggested for baby's safety when traveling. Mother can put the prescribed amount of powder for each feeding in a capped, sterile nursing bottle and carry boiled water in a Thermos bottle. Each feeding can then be prepared just before use.

The powder is also especially adaptable for use wherever refrigeration facilities are not available. Here, too, individual feedings may be mixed as needed.



POWDER and LIQUID
Baker's Modified Milk is made from Grade A Milk (U. S. Public Health Service Milk Code), which has been modified by replacement of the milk fat with animal and vegetable oils and by the addition of carbohydrates, vitamins and iron.

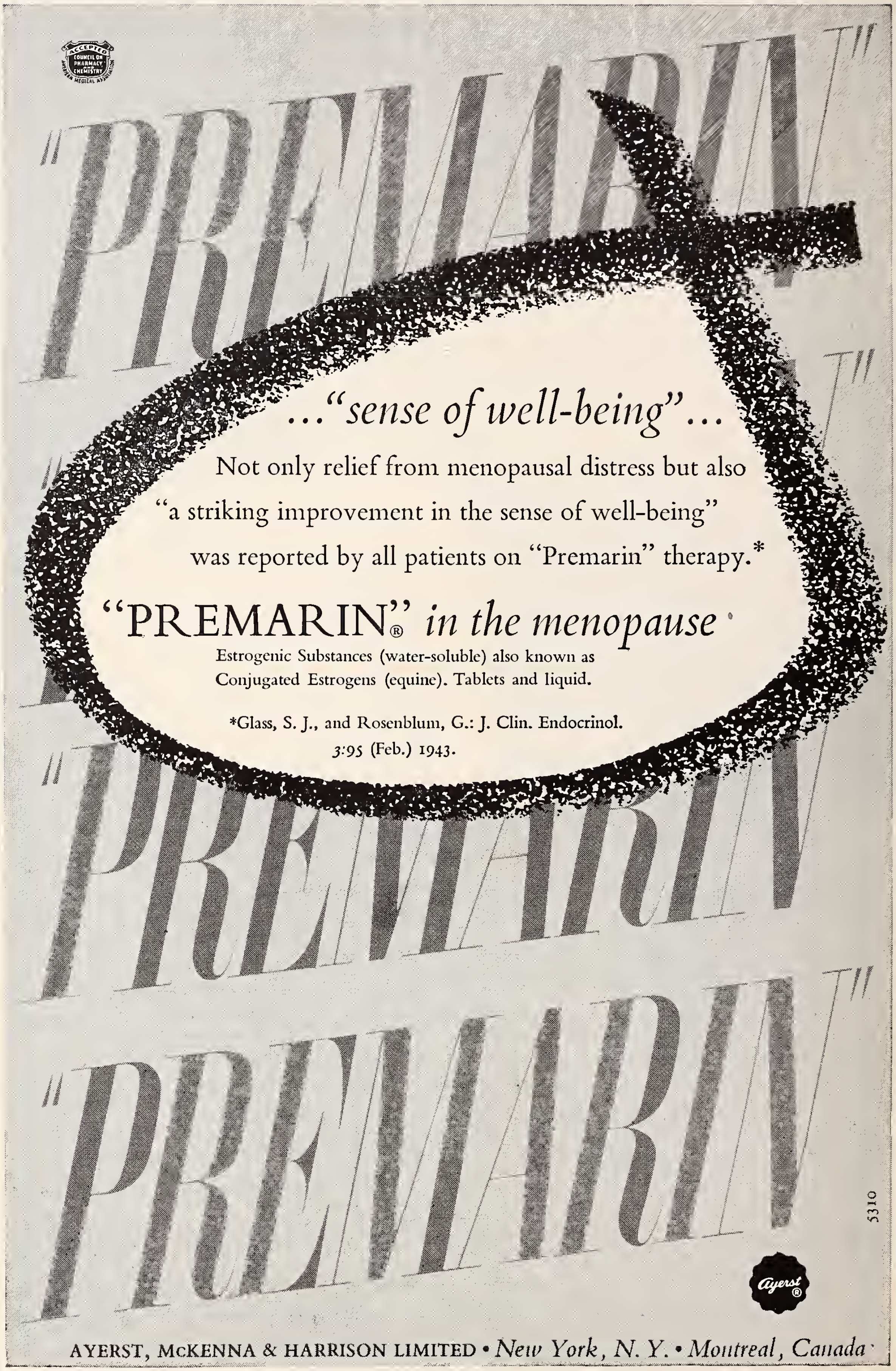
BAKER'S MODIFIED MILK
POWDER FORM

Simplifies infant feeding when traveling and whenever refrigeration facilities are not available

(1) Cheadle—*Artificial Feeding and Food Disorders of Infants*, Sixth Edition (1906)

BAKER'S MODIFIED MILK
THE BAKER LABORATORIES INC.
Main Office: Cleveland 3, Ohio
Plant: East Troy, Wisconsin
Division Offices: Atlanta, Dallas, Denver, Greensboro, N. C., Los Angeles, San Francisco, Seattle

ACCEPTED
COUNCIL ON FOODS AND NUTRITION
AMERICAN MEDICAL ASSOCIATION


"PREMARIN"
"PREMARIN"
"PREMARIN"
"PREMARIN"
5310
Ayerst

..."sense of well-being"...

Not only relief from menopausal distress but also "a striking improvement in the sense of well-being" was reported by all patients on "Premarin" therapy.*

"PREMARIN®" *in the menopause*

Estrogenic Substances (water-soluble) also known as Conjugated Estrogens (equine). Tablets and liquid.

*Glass, S. J., and Rosenblum, G.: J. Clin. Endocrinol. 3:95 (Feb.) 1943.

AYERST, McKENNA & HARRISON LIMITED • *New York, N. Y.* • *Montreal, Canada*

SUPERMIX liquid chemicals are 6 ways better than powders

Read why 83% of GE's customers have switched to liquids

SUPERMIX X-RAY DEVELOPER

EVERY PROCESSOR WANTS THESE	HOW SUPERMIX LIQUID CHEMICALS GIVE YOU THESE ADVANTAGES
1 BETTER FILMS	SUPERMIX Developer brings out every bit of contrast, density and detail that are in the film. And, with proper refreshing, it will do it in the same time month after month.
2 MORE FILMS	Using SUPERMIX liquid chemicals, you can process nearly twice the number of films possible with powders in a given time. That means you can handle a much greater film load without interruption.
3 FASTER PROCESSING	Fresh SUPERMIX Developer works in 3 minutes. Fresh SUPERMIX Fixer clears in 45 seconds — films are ready for wet-film viewing in 4 minutes — completely developed and fixed in 5.
4 LESS WORK	No pails, pans, paddles, thermometers or screwdrivers! Just pour SUPERMIX into the tank, add water at working temperature — and you're all set. No overnight wait.
5 EXTREME STABILITY	SUPERMIX Developer, Refresher and Speed Fixer have withstood tests in temperatures as low as 75° below zero . . . as high as 155° F for 30 consecutive days—without damage.
6 LOWER COSTS	The long life and increased output of SUPERMIX liquid chemicals save you money. Using Refresher, you can process 1200 14 x 17's in SUPERMIX for a cost of *only 3.7¢ each!*

Ask your GE x-ray representative for a copy of our informative booklet, "A Look at X-Ray Film Processing," or write:

You can put your confidence in —

GENERAL ELECTRIC

Direct Factory Branches:
MINNEAPOLIS — 808 Nicollet Avenue
DULUTH — 928 East 2nd Street

Resident Representatives:
MANKATO — J. F. Van Osdell, 123 Blue Earth
ST. PAUL — R. H. Holen, 153 W. Robie
SIOUX FALLS — H. L. Norlin, 1908 S. Sixth Avenue

NOTES: TREATMENT OF ANAL PRURITUS

New! SOOTHING, READY-TO-USE PADS REPLACE HARSH TOILET TISSUE

What are they?

Tucks are pure, soft outing flannel pads moistened and mildly medicated with a special solution containing witch hazel and glycerin.

Gentle, thorough

Being moist, Tucks clean the pruritic area completely, removing all vestiges of contaminating fecal material. Being soft, they cannot irritate sensitive anal tissue and cause further aggravation.

Majority improve

Numerous clinical reports indicate that a majority of cases of anal pruritus will show appreciable improvements when Tucks are prescribed to replace toilet tissue. Tucks have been recommended further as a prophylactic measure against all forms of anorectal disease which may be caused or aggravated by improper anal hygiene. We suggest you try Tucks for your next case of anal pruritus.

How supplied

Tucks are provided in jars of 100. A supply for trial will be sent you upon written request. Address Dept. M-3, Fuller Pharmaceutical Co., 715 So. 10th St., Minneapolis 4, Minn.

Tucks

Mildly medicated cleansing cloths
Benadex • Benzocones • Hydrocil
Hydrocil Fortified • products of

fuller
PHARMACEUTICAL COMPANY

Upjohn

long-acting androgen:

Depo-Testosterone

Trademark Reg. U. S. Pat. Off. CYCLOPENTYLPROPIONATE

ACCEPTED COUNCIL ON PHARMACY AND CHEMISTRY AMERICAN MEDICAL ASSOCIATION

Each cc. contains:

Testosterone Cyclopentylpropionate ....50 mg. or 100 mg.
Chlorobutanol .... 5 mg.
Cottonseed Oil ....q.s.

50 mg. per cc. available in 10 cc. vials

100 mg. per cc. available in 1 cc. and 10 cc. vials

The Upjohn Company, Kalamazoo, Michigan

Depo*-Testosterone
Cyclopentylpropionate
Upjohn

P&H®

Your

Complete

Source

AS VARIED
AS THE NEEDS OF
YOUR PATIENTS

CAMP
LUMBOSACRAL
SUPPORTS

No matter the type of build, proportionate irregularities or complications of obesity, pendulous abdomen or other conditions, our large and comprehensive stock of CAMP LUMBOSACRAL SUPPORTS—for men and women—insures prompt service and precise execution of your instructions. Our professionally trained fitters may be relied upon for the kind of individual and understanding service you seek for your patients.

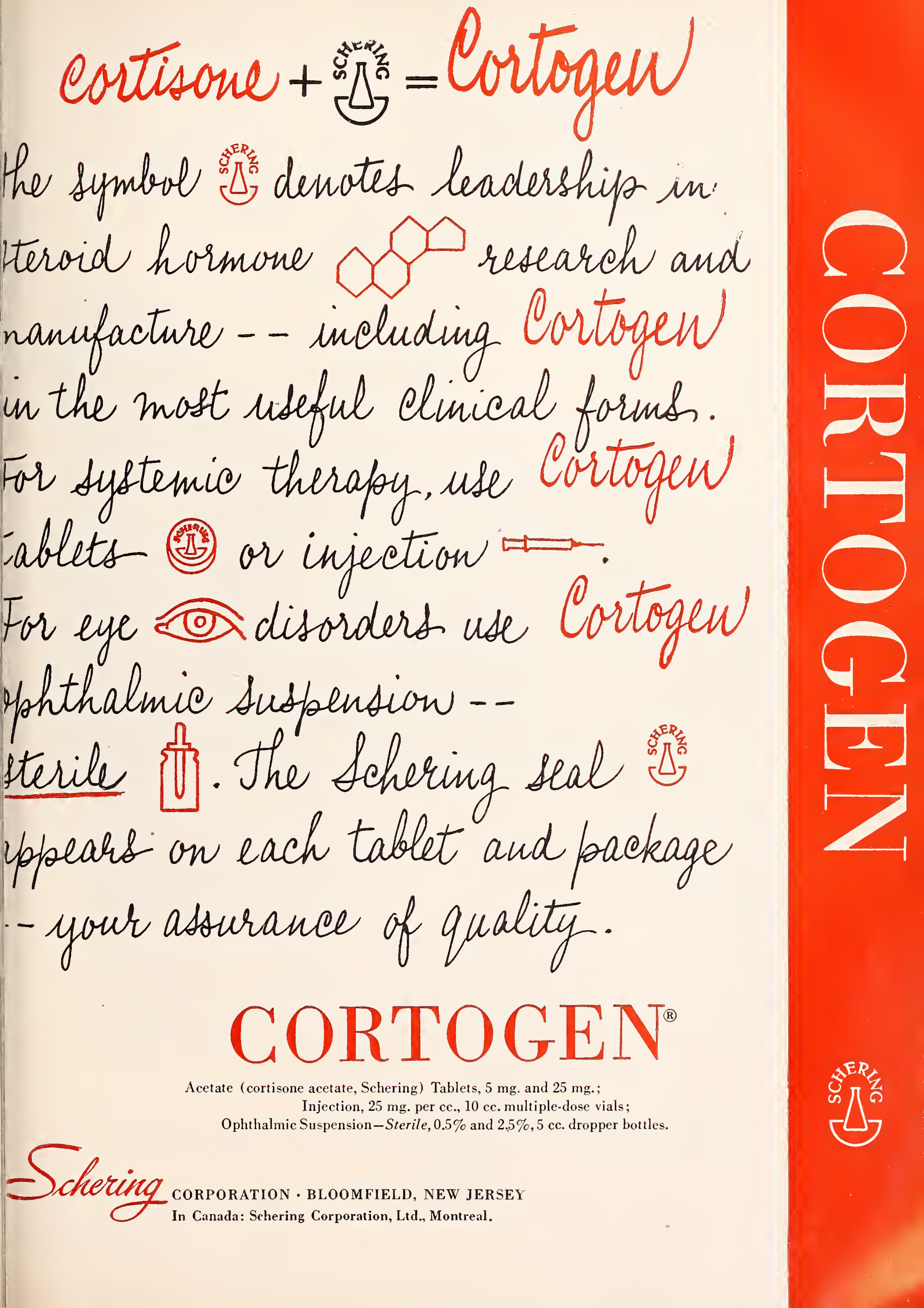
If your patients cannot visit us, special attention is paid to hospital and home fittings or mailed prescriptions.

Authorized CAMP Service

For prompt, efficient, and satisfactory service, send your orders for anatomical supports, trusses, and elastic hosiery to P&H, or if you prefer, you can refer your patients to us for expert fitting.

M-653a

PHYSICIANS & HOSPITAL SUPPLY CO., Inc.
1400 HARMON PLACE MINNEAPOLIS 3, MINNESOTA



Cortisone + = Cortogen

he symbol denotes leadership in
teroid hormone research and
nanufacture -- including Cortogen
n the most useful clinical forms.
For systemic therapy, use Cortogen
ablets or injection.
For eye disorders use Cortogen
phthalmic Suspension --
sterile. The Schering seal
ppears on each tablet and package
-- your assurance of quality.

CORTOGEN®

Acetate (cortisone acetate, Schering) Tablets, 5 mg. and 25 mg.;
Injection, 25 mg. per cc., 10 cc. multiple-dose vials;
Ophthalmic Suspension—*Sterile*, 0.5% and 2.5%, 5 cc. dropper bottles.

Schering CORPORATION · BLOOMFIELD, NEW JERSEY
In Canada: Schering Corporation, Ltd., Montreal.

CORTOGEN

New Horizons in Antibiotic Therapy

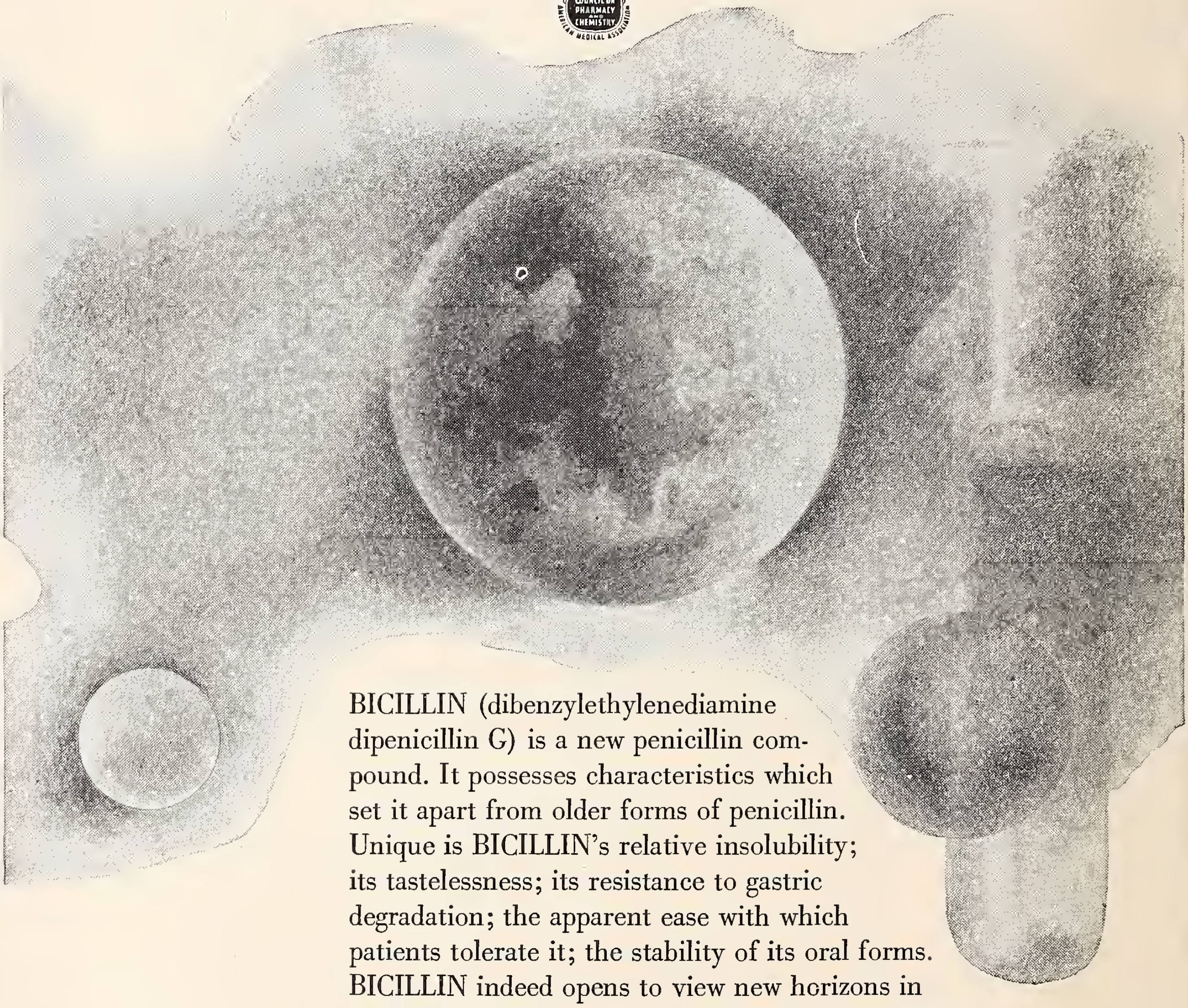
BICILLIN®

Dibenzylethylenediamine Dipenicillin G

A NEW FORM OF PENICILLIN

***NOW*... Council Accepted**

ACCEPTED COUNCIL ON PHARMACY AND CHEMISTRY AMERICAN MEDICAL ASSOCIATION



BICILLIN (dibenzylethylenediamine dipenicillin G) is a new penicillin compound. It possesses characteristics which set it apart from older forms of penicillin. Unique is BICILLIN's relative insolubility; its tastelessness; its resistance to gastric degradation; the apparent ease with which patients tolerate it; the stability of its oral forms. BICILLIN indeed opens to view new horizons in antibiotic therapy . . . new applications of penicillin—drug of choice in a wide range of infections.

BICILLIN is available in oral suspension, tablet and injectable forms

Wyeth® Philadelphia 2, Pa.

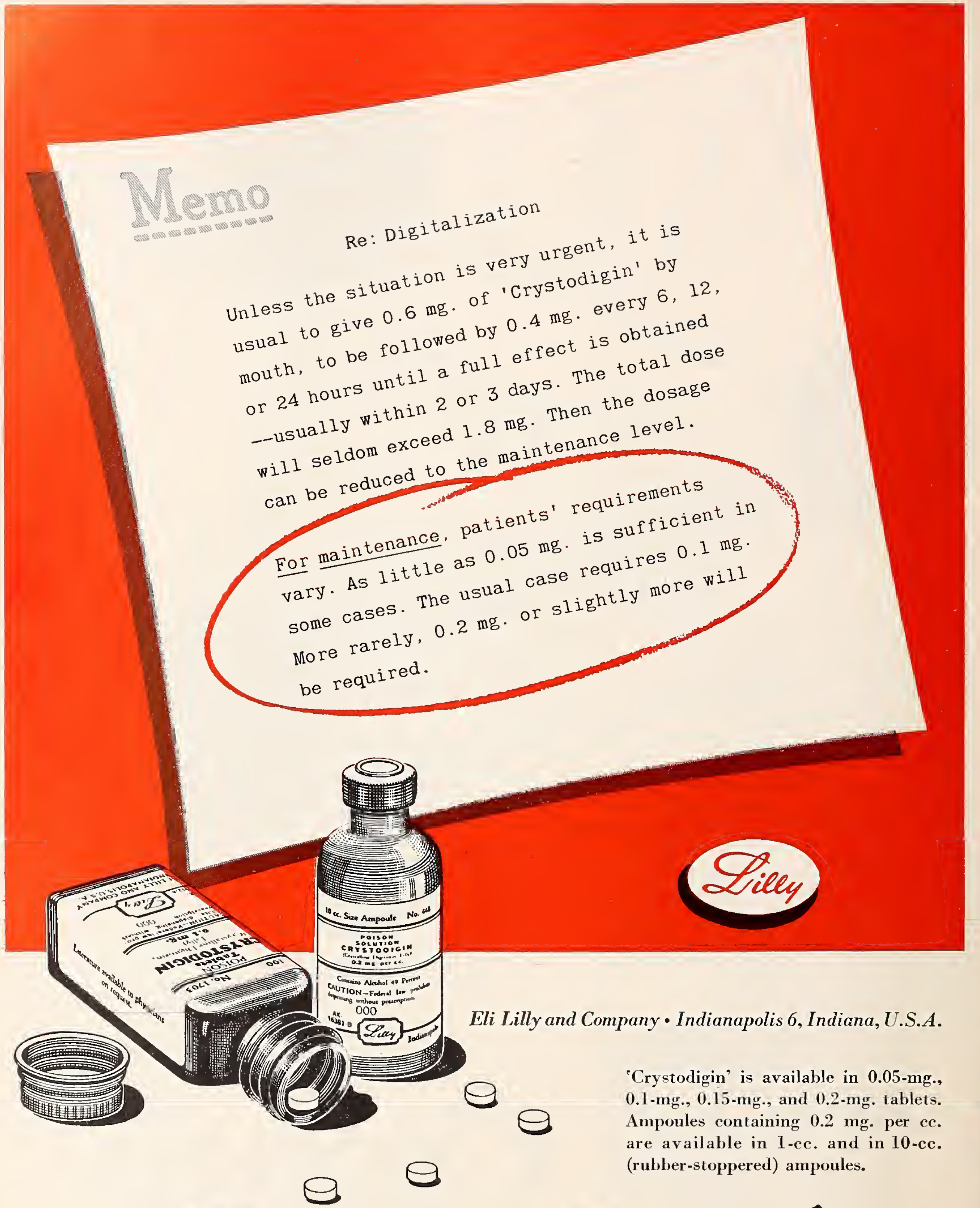
Mild
Cool
Flavorful
CAMEL
CHOICE QUALITY
CAMEL
TURKISH & DOMESTIC
BLEND
CIGARETTES

There must
be a reason why...

More people smoke

Camels

than any other
cigarette!


Memo
Lilly
10 cc. Size Ampoule No. 448
POISON SOLUTION CRYSTODIGIN
0.2 mg. per cc.
Contains Alcohol 49 Percent
CAUTION—Federal law prohibits dispensing without prescription
CRYSTODIGIN Tablets 0.1 mg.
No. 1703
Literature available to physicians on request.

Re: Digitalization

Unless the situation is very urgent, it is usual to give 0.6 mg. of 'Crystodigin' by mouth, to be followed by 0.4 mg. every 6, 12, or 24 hours until a full effect is obtained —usually within 2 or 3 days. The total dose will seldom exceed 1.8 mg. Then the dosage can be reduced to the maintenance level.

For maintenance, patients' requirements vary. As little as 0.05 mg. is sufficient in some cases. The usual case requires 0.1 mg. More rarely, 0.2 mg. or slightly more will be required.

Eli Lilly and Company • Indianapolis 6, Indiana, U.S.A.

'Crystodigin' is available in 0.05-mg., 0.1-mg., 0.15-mg., and 0.2-mg. tablets. Ampoules containing 0.2 mg. per cc. are available in 1-cc. and in 10-cc. (rubber-stoppered) ampoules.

'Crystodigin'

(CRYSTALLINE DIGITOXIN, LILLY)

Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 36 **June, 1953** **Number 6**

THE FUTURE OF THE MEDICAL SCHOOL OF THE UNIVERSITY OF MINNESOTA

E. T. BELL, M.D.
Emeritus Professor of Pathology
University of Minnesota Medical School
Minneapolis, Minnesota

I HAVE chosen to speak of the future of our medical school rather than of its past. We can learn from the past but we cannot change it. The future is what we make it. The Medical School has a short past but an infinite future. It will go on as long as our society endures. When the youngest of us has passed on it will still be young. We cannot conceive of any form of society except barbarism in which it will not be necessary to train physicians. Even Soviet Russia with her harsh despotic government has medical schools, although they have probably deteriorated. The socialization of medicine, undesirable as it is, would not weaken medical education.

We cannot plan very far beyond the span of our own lives, but we can build a solid foundation for those who come after us. We should plan now to meet the problems that we can foresee.

I think of the Medical Foundation as a self-perpetuating body composed of men and women with a deep interest in medical education and an unselfish devotion to the medical school. I think of it also as a permanent advisory council always ready and willing to support the school. I do not think we should interfere with the administration except in a dire emergency. Certainly we should not interfere with the splendid present administration, but there was a time about forty years ago when the school was saved from disaster and started forward by the intervention of three loyal alumni, of which our beloved Dr. Ed Tuohy was one. But for these three men our progress would have been delayed a score of years. If such a situation should arise again this organization should come to the rescue.

What are the problems that the medical school faces in the foreseeable future?

Shortage of Physicians

The people in the rural areas of the state are complaining bitterly because they have no doctors, and their voices are growing louder in the legislature each biennium. There are as many doctors per thousand of population as we have ever had, but a great many are in the armed services and there is every indication that this situation will continue for a long time. A more important cause of the shortage is an increased public demand for medical service which has been stimulated by health programs. It is hard to find a physician at the present time who does not have all the work he can handle. If the population of the United States continues to increase as anticipated and the output of medical graduates remains the same, there will eventually be an even greater shortage. We know that the shortage of physicians is not due to a deliberate action of the medical profession in curtailing the supply of young doctors, but the public thinks it is our fault. They believe we are like a trade union which restricts the number of apprentices they will train. We must do something about this situation. If we continue to ignore it the public may give us something that we do not like such as socialized medicine. I believe that we must try to increase the number of doctors without sacrificing the quality of their training. How can we accomplish this?

It seems easier and less expensive to increase

An address to the Minnesota Medical Foundation, May 18, 1953.

the enrollment in existing schools than to establish new ones. One very important point that our legislature does not understand is that nearly half of our graduates go to other states, and other states supply a large percentage of Minnesota doctors. If we should double the enrollment at Minnesota it might not help our local shortage. Our graduates might go to other states as half of them now do. Any helpful action must be on a national scale. If all the State-supported schools or a majority of them increased their enrollment it would improve the situation. We cannot expect the private medical schools to act since they are not under legislative pressure.

If Minnesota should increase her enrollment as much as 50 per cent the quality of instruction would deteriorate unless our staff and teaching facilities were correspondingly increased. The state would be obliged to spend more money. Expansion of the basic science departments could be accomplished without a great outlay of money, but a suitable increase in the hospital services would involve an enormous expense if it could be accomplished at all under our present system.

But we could have enormous clinical facilities without any additional expense if we could persuade the people of our state to build federal, state and municipal hospitals on or near the Medical Campus.

The Veterans Administration is now convinced that their hospitals under the supervision of medical schools give vastly better service to veterans than those placed in small communities. They want to have their hospitals run by the medical schools, but Congressmen and other politicians often thwart them and get the hospitals located where they are inaccessible to medical students. Let us get the veterans' organizations to support us in demanding that these hospitals be built near medical schools. The State could then train more doctors with little additional expense.

The State should build at least one mental hospital near the campus. We do not have an adequate medical staff in any of the state hospitals, but such a hospital near the campus would be well staffed and would supply desirable clinical material.

Minneapolis should build its new City Hospital on or near the campus. A city hospital provides a rich variety of clinical material. Patients are better cared for in a teaching hospital since the staff know that they are being criticized by eager young minds. The University of Cincinnati uses the Municipal hospital as its sole source of clinical material. About forty years ago the Rockefeller Foundation offered to build Minneapolis a hospital on the University Campus. The regents offered the land free, but our shortsighted City Council declined the gift.

One of the tasks which this organization might undertake is to persuade the people of our state that they can have more doctors without much additional expense if they will build their federal, state and municipal hospitals accessible to the Medical Campus.

General Practice and Specialization

In the past there has been much criticism directed at the medical school because a disproportionate number of graduates become specialists. However, this situation is improving. Because young men have had to spend two years or more in military service they do not have the time to devote three years to preparation for a specialty and more of them are going into general practice. We should make special provisions for these men such as a two-year internship with emphasis on Internal Medicine. There is an unfortunate tendency for men in general practice to take up major surgery without adequate training. Unnecessary and incompetent surgery is injuring the reputations of all of us and creating a distrust of doctors. Perhaps we teachers do not spend enough time indoctrinating our students with their obligation and responsibility to the public which has borne the major share of the cost of their education.

Our medical school now ranks high as a center for good teaching and creative thought. Let us try to maintain this excellence. I have every confidence that those who come after us will carry on.

Because of wider and broader education people have learned the value of modern medicine in relieving and preventing sickness. New health attitudes are resulting from intelligent health education.—Hugh R. Leavell, M.D., *New England J. Med.,* (Dec. 4) 1952.

PATIENTS' IMPRESSIONS OF A COMMUNITY MENTAL HEALTH CENTER

CHARLES KRAM, Ph.D., and N. J. BERKWITZ, M.D.
Minnesota Department of Public Welfare
Albert Lea, Minnesota

THE *Albert Lea Community Mental Health Center* is a state-supported unit under the supervision of the Department of Public Welfare of the state of Minnesota. It began operations in January of 1951.

The clinic has a twofold purpose. Follow-up treatment is provided for patients provisionally discharged from state hospitals who reside near the clinic. In addition psychiatric care is offered to indigent state residents upon referral by their family physicians. The clinic also acts as an educational center for the community regarding mental health matters.

The staff consists of a psychiatrist, a psychiatric social worker, a clinical psychologist, and a clerk-stenographer. The clinic is located in one of the office buildings in the center of town.

Treatment consists of psychotherapy, eclectic in nature. Faradic stimulation[1] combined with intravenous sodium amytal is given as an adjuvant to psychotherapy in a fairly large percentage of patients treated.

In the Spring of 1952, it was felt that a sufficient number of patients had been seen to warrant making a survey. This survey was to have a threefold purpose: (1) to obtain the patients' opinions of clinic services; (2) to inform the clinic of means through which these services could be improved; and (3), to gain information as to the efficacy of the treatment.

It was decided to employ a questionnaire form to be mailed to each patient and ex-patient. Simplicity and brevity were stressed in constructing the questionnaire and the accompanying explanatory letter. A code number was typed on each questionnaire, and fairly inconspicuously located so as to permit for anonymity if desired by the respondent. The code number allowed for identification of the patient.

The questionnaire consisted of six items. The first five items comprised attitudes regarding cessation of therapy, benefits received, returning to the clinic if necessary, and the no-fee basis under which the clinic operates. Each item could be answered by checking one of the several possible replies listed under each of the five items. The sixth item invited criticisms and suggestions.

A total of 172 replies were received. Fourteen letters were returned because the present address was unknown to the post office.

TABLE I.
NUMBER OF QUESTIONNAIRES SENT AND RECEIVED

	Ex-Hospital Patients	Privately Referred Patients	Total
Number Sent	65	277	342
Number Received	55	186	241
Per Cent Received	84.61%	67.14%	70.46%

One month later a follow-up letter with a questionnaire form was again sent to 156 individuals of the original 342. These were the individuals who had not replied formerly. The follow-up letter elicited more than a 20 per cent increase in the number of replies. A greater percentage of ex-hospital patients replied than did the non-hospital patients.

A total of 69 replied to the follow-up letter. This yielded a grand total of 241 replies out of the original 342 forms mailed. Table I presents this information with corresponding percentages.

In almost every instance, the patient himself filled out the questionnaire. There were a few instances wherein the patient was a youngster or illiterate and where, therefore, a parent or a spouse replied for the patient.

Not all the respondents answered each item on the form. There were 30 forms returned completely blank but accompanied by a letter. There were also 42 forms which were found to be partially blank. Consequently, in compiling the total results for each item, it was necessary to determine a separate index, from which individual percentages were then computed.

Results

It shall prove significant in the interpretation of the therapeutic results, in Table II to keep in mind that almost 70 per cent of the replies were from individuals who were no longer receiving therapy.

TABLE II. PATIENT STATUS

	Ex-Hospital Patients		Privately Referred Patients		Grand Totals	
	N	Index	N	Index	N	Index
	54	100.00%	186	100.00%	240	100.00%
Present Patients	6	11.11%	68	36.55%	74	30.83%
Former Patients	48	88.89%	118	63.45%	166	69.17%

TABLE III. REASONS FOR TERMINATING THERAPY

	Ex-Hospital Patients		Privately Referred Patients		Grand Totals	
	N	Index	N	Index	N	Index
	36	66.66%	97	52.15%	133	55.41%
Maximum Benefits Achieved	20	55.55%	70	72.16%	90	67.67%
Against Clinic Advice	0	00.00%	9	9.27%	9	6.76%
Extraneous	16	44.45%	18	18.54%	34	25.56%

The indeces indicate the percentage of replies to that specific item, from the total number of questionnaires returned. The percentages underneath are then computed from each index, taking that index-percentage to be 100.00 per cent.

It may be noted that 16.61 per cent more of the privately referred patients ceased therapy because of having received maximum benefits. None of the ex-hospital patients stopped therapy against the advice of the clinic.

As may be seen from Table IV, 8.98 per cent more privately referred patients felt they had improved as a direct result of therapy whereas 9.75 per cent more patients stated a lack of improvement. This may be partially explained in that privately referred patients are seen more frequently and receive more intensive psychotherapy. The ex-hospital patients usually receive direct counseling.

It is interesting to note, in Table V, that 3.45 per cent more ex-hospital patients stated a preference for returning to the clinic. Although, as a group, fewer had considered themselves improved in comparison to privately referred patients.

The fact that 10.23 per cent more ex-hospital patients preferred paying a fee may be accounted for in that having been previously hospitalized they had already received more state aid and possibly felt more indebted. At any rate, the total 16.12 per cent, who were in favor of fees, constitutes a large enough percentage to merit further deliberation on the matter of charging a nominal clinic fee.

TABLE IV.
PATIENTS' OPINIONS OF THERAPY RESULTS

	Ex-Hospital Patients		Privately Referred Patients		Grand Totals	
	N	Index	N	Index	N	Index
	40	74.07%	156	83.87%	196	81.66%
Condition Improved	30	75.00%	131	83.98%	161	82.14%
Therapy Terminated Prematurely	2	5.00%	9	5.76%	11	5.61%
Condition Unchanged	8	20.00%	16	10.25%	24	12.24%

TABLE V.
PATIENTS' FUTURE PLANS REGARDING CLINIC TREATMENT SHOULD PSYCHIATRIC CARE BE NEEDED

	Ex-Hospital Patients		Privately Referred Patients		Grand Totals	
	N	Index	N	Index	N	Index
	32	59.25%	79	42.47%	111	46.25%
Will Return	25	78.13%	59	74.68%	84	75.67%
Will Not Return	7	21.87%	20	25.32%	27	24.33%

The ex-hospital patients found more to criticize negatively than to approve, when compared to the privately referred patients. However, when many of these criticisms are examined, they are found to be projections of near-psychotic mentations. For example, one such patient felt we lacked divine inspiration, another felt guilty because by attending the clinic he was acting contrary to God's wishes.

A number of suggestions were helpful and the clinic intends acting upon them. For example, one patient stated she felt uneasy at meeting other patients in the clinic who were from her home town. Several patients preferred not having "Mental Health Center" mentioned on the phone when being called, as they were on party lines.

Furthermore, about ten patients who had stopped therapy against clinic advice, found themselves eager to return after ventilating themselves in this part of the questionnaire.

Over half of the respondents were sufficiently interested to voluntarily write letters, in addition to completing the questionnaire. More than 40 per cent found no objection to signing their names to their replies.

A small percentage refused to admit patient status even though in each instance the clinic files held contrary evidence. A total of six former patients (2.50 per cent) stated they wanted to

TABLE VI.
PATIENTS' ATTITUDES TOWARDS LACK OF FEES

	Ex-Hospital Patients		Privately Referred Patients		Grand Totals	
	N	Index	N	Index	N	Index
	37	68.51%	149	80.10%	186	77.50%
Prefer No Fee	28	75.68%	128	85.91%	156	83.88%
Prefer a Fee	9	24.32%	21	14.09%	30	16.12%

TABLE VII. PATIENTS' SPONTANEOUS COMMENTS

	Ex-Hospital Patients		Privately Referred Patients		Grand Totals	
	N	Index	N	Index	N	Index
	13	24.07%	85	45.69%	98	40.83%
Approval and Appreciation	6	46.15%	56	65.88%	62	63.26%
Constructive Criticisms	3	23.08%	6	7.05%	9	9.18%
Negative Comments	4	30.77%	23	27.07%	27	27.54%

TABLE VIII. MISCELLANEOUS FACTORS

	Ex-Hospital Patients		Privately Referred Patients		Grand Totals	
	N	Index	N	Index	N	Index
	54	100.00%	186	100.00%	240	100.00%
Spontaneous Letters	29	53.70%	94	50.53%	123	51.25%
Names Signed	27	50.00%	90	48.38%	117	40.87%
Denied Being a Patient	4	7.40%	18	9.13%	22	9.16%
Requests No Further Correspondence	3	5.55%	3	1.61%	6	2.50%
Hospitalized Since Therapy	4	7.40%	5	2.68%	9	3.75%

sever all relations with the clinic. No one of the six offered any reasons, however.

Another measure of therapeutic success may be seen by the fact that only 3.75 per cent, a total of nine patients, had required hospitalization following their visits to the clinic. Five of these nine patients were seen at the clinic for examination only. Following this, hospitalization was recommended.

Conclusions

A questionnaire survey was made of 342 patients who had attended the Albert Lea Community Mental Health Center for examination and treatment. The period of treatment extended from January 10, 1951, through May 1, 1952. A total of 241, or 70.46 per cent, replied.

The following significant trends are indicated:

(a) 69.17 per cent of the respondents were no longer in therapy.

(b) 67.67 per cent had achieved the maximum benefits the clinic could offer.

(c) 82.14 per cent felt improved as a direct result of therapy.

(d) 75.67 per cent plan to return to this clinic if they should need further treatment.

(e) 83.88 per cent preferred the absence of fees.

(f) 63.26 per cent spontaneously expressed appreciation and approval of the clinic.

(g) 51.25 per cent voluntarily wrote a letter in addition to answering the questionnaire.

(h) 3.75 per cent have been hospitalized.

The purpose of the questionnaire has been fulfilled. The results suggest that the form of psychotherapy offered meets with success in a majority of cases (82.14 per cent). In addition only 3.75 per cent of the total required hospitalization. Most of the patients seen, 63.26 per cent, were appreciative of the clinic's efforts, and approved of the clinic routine. Many of the suggestions offered by 36.72 per cent of the respondents shall be incorporated into the present clinic framework so as to provide improved satisfactory service.

Reference

1. Berkwitz, N. J.: Out-patient treatment with faradic (non-conculsive electric) stimulation. Dis. Nerv. System, 13:3-12, 1952.

BARRIERS AGAINST DISEASE

Our community-wide barriers against disease, applying to large groups rather than only to individuals and not possible except through organized action, are: physical—filtration of water, pasteurization of milk, improved housing, and air pollution control; physiological—widespread immunization programs, better nutrition, and fluoridation of water supplies; epidemiological—isolation, quarantine, vector eradication, and early case control; and educational — accident prevention, heart disease, and cancer information leading to prevention or early recognition, and promotion of health habits leading to a high level of total physical, emotional, and mental efficiency.—Berwyn F. Mattison, M.D., *Am. J. Pub. Health,* (Dec.) 1952.

PRIMARY NEOPLASMS OF THE LUNG

Review of Minneapolis Public Health Center Cases

DE FOREST R. HASTINGS, M.D., F.A.C.P.
Minneapolis, Minnesota

THE various primary neoplasms of the lung are more frequently diagnosed than formerly and their increased incidence is recognized. Heretofore clinicians believed that chest tumors were rare, their antemortem diagnosis almost impossible and the treatment so unsatisfactory as to make a careful search for them a variable waste of time and effort. These tumors may now be removed with relative safety as a result of the newer methods of surgery. Thoracic surgery is available in almost all parts of the country and there is justifiable reason at this time for all physicians to give great heed to the early diagnosis of these lesions. Community-wide chest x-ray surveys have revealed a certain number of these neoplasms hitherto unsuspected. When removed in the incipient stage, there is a great possibility of accomplishing a cure. It has been shown that many of the chronic or persistent infections of the lung are due to bronchial occlusions by tumors—only curable by surgery. Following is a discussion of the increasing frequency of carcinoma, a description of the means of its detection, and a presentation of a few of the cases seen in the Public Health Center Chest Clinic in Minneapolis.

Incidence

The incidence of primary neoplasms, particularly bronchogenic carcinoma, is increasing more rapidly than any other form of malignancy. Forty years ago carcinoma of the lung was rarely seen. Today carcinoma is one of the most frequent malignant lesions in man. In the ten years from 1938 to 1948, the number of fatalities from bronchogenic carcinoma in the United States increased 144 per cent—from 6,732 in 1938 to 16,450 in 1948. In this same period of time, the total cancer deaths from all types of cancer increased 31 per cent—149,214 in 1938 to 195,594 in 1948. From 1920 to 1948 the death rate from bronchogenic carcinoma per 100,000 population in the United States increased ten times—from 1.1 to 11.3 per cent. In 1950, the death rate from bronchogenic carcinoma in Minneapolis was 8.6 per cent. According to Doll and Hill, deaths from cancer of the lung in England increased fifteenfold from 1922 to 1947.

There has been considerable controversy concerning the cause of the increase in bronchogenic carcinoma, but no known cause has been definitely proven. According to Wynder, and Graham, excessive and prolonged cigarette smoking is an important factor in the genesis of bronchogenic carcinoma. They have found that in their 605 male patients with bronchogenic carcinoma, only 2.6 per cent did not smoke or smoked minimally, whereas over 96 per cent had smoked heavily for over twenty years. "In the controlled male population 14.6 per cent did not smoke and 73.7 per cent smoked moderately." Levin, Goldstein and Gerhardt also found that there were more smokers among cancer patients than in non-cancer patients and that the patients with bronchogenic cancer usually smoked cigarettes. It is my opinion that there is a positive correlation between carcinoma and smoking.

Diagnosis

Sputum examination for cancer is gaining popularity in many medical centers and hospitals as experience with the method is acquired. Expectorated specimens may be smeared while fresh and examined by the technique of Papanicolaou, or bronchial washings may be obtained, centrifuged and imbedded for staining with hematoxin and eosin. In our experience sputum examination has been very unsatisfactory and has given us very little of value in the diagnosis of neoplasms.

The standard x-ray examination of the chest, while one of our most valuable aids in the detection of primary lung tumors, often fails to reveal the shadow of the tumor itself. Lateral views and often oblique projections will sometimes show abnormal shadows behind the heart or diaphragm. Even the evidence provided by radiographs may only indirectly point to the presence of a tumor, such as atelectasis of a lobe or lobule, interstitial pneumonitis and abscess, virus pneumonia, apparent tuberculosis or pleural fluid. Certainly, absence of a tumor shadow is insufficient evidence upon which to rule out the existence of a tumor when symptoms or signs indicate the possibility of its presence. All too often an early carcinoma or other bronchial neoplasm is not recognized until the x-ray is repeated. When definite tumor shadows are seen on the x-ray film, it is impossible to identify with certainty the type of neoplasm present.

Carcinoma of the bronchus is the most frequently encountered primary tumor of the lung. Most of the other primary neoplasms will be revealed in the course of an attempt to prove or disprove the presence of carcinoma. The diagnosis of bronchogenic carcinoma is often rendered difficult because of an associated pulmonary infection. The clinical and x-ray pattern may be indistinguishable from tuberculosis, even as to cavity formation. Interstitial pneumonitis and abscesses often complicate the picture, and a diffuse, infiltrative type of carcinoma closely resembles fungus infections in its clinical and roentgenological manifestations. To further complicate the diagnosis, non-pathogenic monilia is found in the sputum as acid-fast forms of bovis actinomycetes. Bronchial carcinoma may appear to be a discrete, sharp and circumscribed intrapulmonary tumor which grows at an imperceptible rate and has the appearance of a benign tumor. Yet more of these circumscribed shadows are due to carcinoma than are due to adenomas, hematomas and all the rest of the less malignant tumors combined.

Fluoroscopy of the chest is valuable in showing evidence of obstructive tumors. It is also a means of detecting paralysis of one side of the diaphragm when it exhibits paradoxical motion as the patient inhales sharply—a sign which would indicate involvement of the phrenic nerve. Pleural fluid is readily detected. Bronchography is of value in demonstrating the presence of neoplasms in the bronchi, especially when they lie in a smaller bronchus beyond the visible range of bronchoscopy. Persistent filling defect on repeated examination must be viewed as strong evidence in favor of a primary lung tumor. Bronchoscopic examination of the patient suspected of having a primary neoplasm of the lung is absolutely indicated. A high proportion of lung tumors can be detected directly or indirectly by this means.

The total blood counts and differential white cell counts are apparently unaffected directly by primary neoplasm of the lung, and changes are often due to a pulmonary infection. Anemia when present is usually of the secondary or hypochromic variety. The sedimentation rate is usually elevated in the presence of malignant tumors and its increase serves only to arouse suspicion of their presence. Insufficient data are available as yet to establish the place of serological tests for malignancy and the diagnosis of pulmonary neoplasms, especially since tuberculosis frequently produces a false positive result.

Extrapleural thoracotomy should be widely used in patients who present strong presumptive evidence of primary neoplasm of the lung but whose preliminary examination has failed to yield a positive diagnosis. It is used with the same degree of safety as is exploratory laparotomy. To wait to see what develops in a patient who offers suggestive evidence of a pulmonary neoplasm, is to let the opportunity for cure be forever lost. Even benign-appearing tumors should be explored promptly because many of them are actually malignant. Others have malignant potentialities; they may eventually produce bronchial occlusion with suppurative complications. Even those completely benign may assume a size sufficient to crowd contiguous and vital structures with ultimate death of the patient.

Treatment

Until Graham, in 1933, performed the first successful pneumonectomy for a bronchogenic carcinoma, such a diagnosis was equivalent to a death sentence for the patient. The literature now contains an increasing number of patients reported to be alive five or more years after pneumonectomy for carcinoma of the bronchus. The mortality rate incidental to a total pneumonectomy has been reduced to a level comparable to that of an abdominal operation. According to Kinsella, the mortality rate from lobectomy is about 2 per cent, and from pneumonectomy somewhat higher because the general condition of the patient may be rather poor. Technical advantage in physiology, anesthesiology, blood banking, chemotherapy, antibiotic therapy and thoracic surgery has made invasion of the chest a safe and practical procedure.

The objectives of treatment of the patient with bronchogenic carcinoma are twofold. Primary consideration is, of course, complete eradication of the neoplasm. When examination indicates that carcinoma is confined to one lung or the regional lymph nodes, total pneumonectomy is the treatment of choice. The second consideration of treatment is that of palliation and amelioration of the various symptoms when a curative surgical procedure is impossible. As to the inoperable patient, it is important for the comfort and happiness of the patient to maintain as high a level of general health as possible. The use of nitrogen mustard has recently produced marked benefits in the reduction of pain and improvement of bronchial drainage.

TABLE I. CLINIC REFORT OVER FIVE-YEAR PERIOD

	7/1/47-6/30/48	7/1/48-6/30/49	7/1/49-6/30/50	7/1/50-6/30/51	7/1/51-6/30/52	Total
Total Number Admitted to Clinic:						
1. Medical	5237	5001	5100	5281	5368	25987
2. Screening	8411	12050	12994	12566	11700	57721
X-Rays Taken	16004	22644	25590	39606	25641	129485
Medical Clinic Admissions by Diagnosis						
1. Tuberculosis	1838	2268	2210	2227	2260	10803
2. Negative	822	663	486	429	324	2724
3. Deferred	2534	2063	2376	2601	2687	12261
4. Possible Tumors	43	7	28	24	97	199

TABLE II. DISTRIBUTION OF CONFIRMED NEOPLASMS

Malignant Tumors	Total	Successful Surgery	Surgery—Inoperable	No Surgery
Carcinomas				
1. Primary Site Lung and Bronchus	27	4	7	16
2. Other Organs—Metastasis to Lungs	10			10
3. Metastasis—Primary Site Unspecified	4	1		3
Total Carcinomas	41	5	7	29
Sarcomas				
1. Hodgkins Disease	2		1	1
2. Metastatic Sarcoma	1			1
Total Sarcomas	3		1	2
Total Malignant Tumors	44	5	8	31

Table I shows the clinic attendance and x-rays over a five-year period and the classification of patients attending the medical clinic.

Of the 25,987 patients attending the medical clinic in the five-year period, 10,803 (41.6 per cent) were diagnosed tuberculosis, 2,724 (10.5 per cent) were diagnosed negative, 199 (.8 per cent) were diagnosed probable tumors with further clinical studies indicated, and on 12,261 (47.1 per cent) the diagnosis was deferred.

There has been an increasing number of potential tumors found each year in the five-year period. In 1947-48, .8 per cent of the total medical clinic attendance were probable tumors; in 1948-49, .1 per cent; in 1949-50, .6 per cent; in 1950-51, (.5) per cent, and in 1951-52, 1.8 per cent.

The higher incidence in 1947-48 is probably explainable by the fact that there was a more select screening process because of the Mass City X-Ray Survey conducted that year. In 1951-52, the clinic assumed the responsibility of intense follow-up on all individuals with possible tumors, which fact would undoubtedly have some bearing on the markedly increased rate in that year.

In Table II, of the total malignant tumors found, forty-one (93.2 per cent) were carcinomas, and three (6.8 per cent) were sarcomas.

Twenty-seven (65.9 per cent) of the carcinomas had their primary site in the lungs or bronchi. Four (14.8 per cent) of this group have had successful operations, seven (25.9 per cent) had some form of surgery and were found to be inoperable, and sixteen (59.3 per cent) had no surgery and were in all probability, as far as we have been able to establish, inoperable.

Five (11.4 per cent) of the total group of malignant tumors had successful operations; eight (18.2 per cent) were found to be inoperable, and thirty-one (70.4 per cent) had no surgery.

There were no inoperable cases among the benign tumors (Table III). Thirteen (59.1 per cent) of the total number were successfully operated upon, and nine (40.9 per cent) had no surgery. Several of the lateral group have been scheduled for surgery, but it has not been com-

TABLE III. DISTRIBUTION OF CONFIRMED NEOPLASMS

Benign Tumors	Total	Successful Surgery	Surgery—Inoperable	No Surgery
1. Fibroma, Visceral Pleura	1	1		
2. Granuloma	3	3		
3. Hematoma	1	1		
4. Neurofibroma	5	5		
5. Thymoma	1	1		
6. Tuberculoma	5	2		3
7. Tumor, Benign	3			3
Tumor, Metastatic				
8. Masses, Mediastinum	1			1
9. Tumor, Neurogenic	2			2
Total Benign Tumors	22	13		9

TABLE IV.

Cysts	Total	Successful Surgery	Surgery—Inoperable	No Surgery
1. Bronchogenic	3	3		
2. Benign, Pulmonary	2	2		
3. Anterior Colonic	1	1		
4. Dermoid	1	1		
5. Cystic Disease, Lung	2			2
6. Fibrous Cyst	1	1		
Total Cysts	10	8		2

pleted as yet. The greater percentage of benign tumors found and those on which a positive diagnosis was established by the pathologists' report following surgery were: granulomas (13.6 per cent) and neurofibromas (22.7 per cent).

Table IV indicates the types and distribution of lung cysts found. Eight (80 per cent) of these have had surgery. On two (20 per cent) surgery is not indicated at the present time.

Conclusions

The incidence of primary neoplasms of the lung, particularly bronchogenic carcinoma, is increasing more rapidly than any other form of malignancy. Forty years ago, carcinoma of the lung was rarely seen. Today carcinoma is one of the most frequent malignant diseases in man.

The experience with pulmonary tumors at the Minneapolis Public Health Center is presented. During the period from July 1, 1947, to July 1, 1952, 83,708 individuals were seen in the x-ray clinic: of these individuals 25,987 were seen in the Medical Clinic. One hundred ninety-nine possible lung tumors were studied. Representative case histories of these groups are given. Of the twenty-seven patients in the malignant group (primary in the lung), eleven had been operated upon. On four of these eleven patients, surgery was successful and they have survived for a period of five to twenty-seven months, seven of the patients operated on (three were biopsies) were found to be inoperable. One of these patients is still living and has been for approximately eight months. Of the twenty-two in the benign group, thirteen patients were operated upon and have survived for a period of seven to sixty months.

References

1. Boucot, Katharine R., and Cooper, Donald A.: A critical evaluation of mass roentgen surveys. J.A.M.A., 142:1255-1258 (Apr. 22) 1950.
2. Boucot, Katharine R.: Mass surveys in case finding techniques for pulmonary neoplasms. J. Am. M. Women's A., 3:485 (Dec.) 1948.
3. Carr, Duane; Skinner, Edward F.; Robbins, S. Gwin, and Kessler, Charles R.: Primary neoplasms of the lung. Dis. of Chest, 17:618, 1950.
4. Gittens, S. Aubrey: Primary carcinoma of the lung. Dis. of Chest, 21:641, 1952.
5. Mayer, Edgar, and Roswit, Bernard: Newer palliative measures in the management of inoperable bronchogenic carcinoma. Dis. of Chest, 21:491, 1952.
6. Ochsner, Alton; DeBakey, Michael, and Dixon, J. Leonard: Primary cancer of lung. J.A.M.A., 135: 321-327 (Oct. 11) 1947.
7. Ochsner, Alton; Decamp, Paul; DeBakey, M. E., and Greenstein, Jesse P.: Bronchogenic carcinoma. J.A.M.A., 148:691 (Mar. 1) 1952.
8. Overholt, R. H., and Atwell, S. W.: Cancer of the Lung. New York: American Cancer Society, 1950.

THE CLINICAL DIAGNOSIS OF SOME BULLOUS DERMATOSES

CARL W. LAYMON, M.D.
Minneapolis, Minnesota

FEW dermatologic problems are as complex as those concerning the bullous dermatoses. Differences of opinion concerning these diseases are numerous, and the confusion is considerable. There are a large number of synonyms in the nomenclature, and the numerous proper names assigned to these disorders help in no way to understand their pathogenesis. Even now there is debate as to the identity of dermatitis herpetiformis and pemphigus.

Dermatitis Herpetiformis and Pemphigus

Morphology is undoubtedly an important aid in the differentiation of dermatitis herpetiformis and pemphigus. Before Duhring[3] described dermatitis herpetiformis there was general agreement that various types of lesions occurred in pemphigus. Now, if various types of lesions occur, a diagnosis of dermatitis herpetiformis is usually made. The axiom that vesicles or bullae which occur on an intact skin signify pemphigus, and that such lesions on reddened skin signify dermatitis herpetiformis, is an old one. Vesicles or bullae can form on erythematous skin, but the redness may quickly disappear. Conversely, lesions can appear on intact skin and soon be surrounded by a red halo, so it is not possible to be certain about the condition of the skin when the blister developed. Such an unreliable sign can never be used to differentiate dermatitis herpetiformis from pemphigus. Polymorphism has been stressed in dermatitis herpetiformis. It occurs, however, in many cases of pemphigus.

Grouping of lesions is prominent in dermatitis herpetiformis, but is frequently found in pemphigus. In pemphigus vegetans there may be definite grouping. A multiform eruption which doesn't have features of outspoken pemphigus vegetans or foliaceus, plus vesicular, herpetic lesions and early pigmentation is an important group of findings pointing to a diagnosis of dermatitis herpetiformis.

Mucosal involvement is well recognized in pemphigus. Mucosal lesions in dermatitis herpetiformis are extremely rare and offer no important differential point as far as their clinical appearance is concerned. Pure morphologic analysis often does not permit a differentiation between these dermatoses.

Nikolski's sign, which was first described at the Fifth Congress of Russian Physicians in 1894, is not constant but is seen often in pemphigus. It has been observed most frequently in the progressive stages but is not a particularly ominous sign. In most cases of dermatitis herpetiformis Nikolski's sign is absent. Most observers, however, believe that it may be positive in dermatitis herpetiformis, which again emphasizes the insufficiency of our differential diagnostic aids.

Pruritus and other paresthesias are far more prominent symptoms in dermatitis herpetiformis than pemphigus. These must be regarded as a part of the sum-total of various signs and symptoms and cannot be depended upon alone for differential diagnosis.

Eosinophilia in the blood and bullae is frequent in dermatitis herpetiformis but may be found in pemphigus. Many authors feel that this is no differential point at all. Eosinophils have been found as high as 74 per cent in the blood of patients with pemphigus.

For a long time it was believed that sensitivity to halogens was an almost pathognomonic sign of dermatitis herpetiformis and was lacking in pemphigus. Patients, however, in whom dermatitis herpetiformis was originally diagnosed and who presented a positive reaction to potassium iodide, have been known to die with obvious pemphigus several years later.

Undoubtedly, sulfapyridine is the most effective drug in the treatment of dermatitis herpetiformis. In 1947 Costello[1] sent a questionnaire to 100 dermatologists throughout the country, and those who had experience with the drug in this disease stated that 80 per cent of the patients improved to the extent that they were free of symptoms. Twelve per cent of the physicians reported patients who were cured with this form of treatment. In most cases the favorable response is prompt and dramatic. In contrast, sulfapyridine produces only slight or transient improvement in pemphigus.

From the Division of Dermatology, University of Minnesota, H. E. Michelson, M.D., Director; and the Department of Dermatology, Minneapolis General Hospital, Carl W. Laymon, M.D., Director.

While not an infallible method, the therapeutic test with sulfapyridine is the best single means which we have to differentiate dermatitis herpetiformis from pemphigus.

The course is an important factor in the differential diagnosis of the two diseases. Periodicity and heteromorphism speak for dermatitis herpetiformis, while uniformity and homogeneity of bullous outbreaks, plus monotony, favor a diagnosis of pemphigus. It is not acceptable to consider chronic pemphigus as purely bullous since there may be considerable variation as to types of lesions. Pemphigus may start as a vesicular eruption with the later development of bullae. Urticarial wheals and erythematous blotches are frequently seen in dermatitis herpetiformis, but the idea that such lesions are never present in pemphigus is not tenable. Erythema multiforme-like lesions may occur in both disorders.

The long duration with relatively slight disturbance of the general health favors a diagnosis of dermatitis herpetiformis. Not all cases of pemphigus, however, have serious disturbances of the general health until years after the onset. In dermatitis herpetiformis, too, there may be constitutional symptoms, but a favorable course with a non-lethal ending is the rule.

In the light of our imperfect knowledge, it may be summarized that dermatitis herpetiformis is a chronic, inflammatory, exudative dermatosis, an important clinical peculiarity of which lies in the maintenance of good general health, variable burning and pruritus, periodic outbreaks, and a nonfatal outcome. From the clinical standpoint dermatitis herpetiformis is characterized by wheals, papules, vesicles, and rarely pustules. Bullae occur only exceptionally through the confluence of smaller lesions. Scales, erosions, crusts, and spotty pigmentation are important secondary lesions. Another noteworthy sign is the grouping over the shoulders, axillas, sacral regions, flexor surfaces of the upper portions of the arms, and the inner portions of the thighs and legs. Sometimes lesions occur on the dorsal surfaces of the feet, infrequently on the scalp, and rarely, if ever, on the mucous membranes. The groups are of variable size, and depending upon the duration of the disease, show both primary and secondary lesions. Nikolski's sign is rarely, if ever, present. Thus the designation dermatitis herpetiformis should be used only for a well-defined chronic, pruriginous, inflammatory-exudative dermatosis with a favorable prognosis and *only* for such a circumscribed symptom-complex.

Herpes Gestationis

This was described as early as 1875 by Milton[7] in England, and later by Duhring[4] in America. It may occur at any time during pregnancy but usually after the fifth month or during the early postpartum period.

Grouped vesicles and bullae on an erythematous base are the common lesions, first appearing on the abdomen and accompanied by burning and itching. The groins, breasts, and extensor surfaces of the extremities may become involved. Later the eruption may become generalized. The mucous membranes are said to be free in most cases. The disease is prone to recur in succeeding pregnancies. Although some authors have reported recurrences only when the infant was a boy, most observers believe this is not true. Miscarriages, stillbirths, and monstrosities have been reported to occur in patients who had herpes gestationis.

Herpes gestationis is likely to occur earlier and be more severe in subsequent pregnancies. Like ordinary dermatitis herpetiformis, eosinophilia, ranging from 28 to 50 per cent, has been reported in this disorder. The prognosis is usually good. Duhring and other authors stated that herpes gestationis resembles ordinary dermatitis herpetiformis in every respect except the cause (pregnancy). Deaths, however, have been reported in this disease.

Dermatitis Herpetiformis in Children

It should be strongly emphasized that this disorder is extremely rare in children. The lesions tend to be more purely vesicular or bullous with a generalized distribution, and the grouping, which is so characteristic for adults, is usually lacking. The intense paresthesias which characterize the disease in the adult are as a rule less intense, and pigmentation is not a noteworthy feature.

Impetigo Herpetiformis

This is a rare and confusing disorder. The eruption consists of vesicopustules from 1 to 3 mm. in diameter which are discrete in the beginning but soon coalesce to form oozing, crusted foul-smelling lesions surrounded by a dull zone of erythema. Lesions spread peripherally by formation of new pustules leaving reddened, shiny, apparently healed areas.

Lesions of the mucous membranes, especially of the mouth, are present. These consist of grayish white plaques bordered by detached necrotic mucous membrane. They are painful and interfere with mastication and deglutition. In this stage their appearance simulates pemphigus vulgaris.

The disorder most frequently begins in the genitocrural regions where large denuded, crusted, soggy, erythematous patches are encountered. The lower part of trunk and lower extremities may be affected. Rarely the eruption is generalized.

The symptoms are severe, consisting of fever, rapid pulse, vomiting, diarrhea, bone and joint pains, and great prostration. Anorexia, severe pruritus, and insomnia lead to rapid loss of strength and weight.

Bacteriologic examination of the blood and lesions fails to show a causative organism. The cause is unknown. The occasional manifestation of convulsions suggests pathology of the endocrines, especially the parathyroid glands.

The disease usually occurs late during pregnancy or during the puerperal period. Spontaneous abortion has been followed by recovery. Cases in non-pregnant women and even males have been reported. The relationship to dermatitis herpetiformis and pemphigus is not clear. Fletcher Hall,[5] in 1944, reported a case in a male, in which a remission was obtained after treatment with sulfapyridine. His patient did not die. Henry Michelson[6] recently had a case of impetigo herpetiformis in which there was an extremely favorable response to sulfapyridine, suggesting that the disease may be closely aligned with dermatitis herpetiformis. The prognosis is grave, since the maternal mortality is between 70 and 80 per cent.

Pemphigoid Erythema Multiforme

Ordinary erythema multiforme of the so-called Hebra type will not be considered in this discussion. Cases of erythema multiforme are occasionally seen which closely resemble pemphigus. This is the type which Costello has called erythema multiforme pemphigoides. The term has also been used to describe severe bullous eruptions which sometimes follow smallpox vaccination or the ingestion of certain drugs. It is probably preferable, however, to reserve the term for cases for which there is no known cause. Costello and Vandow[2] studied a group of 150 cases of erythema multiforme which occurred over a twelve-year period. About 7 per cent of the entire group fell into the severe bullous type.

In most cases the disease begins on the skin. Occasionally, lesions in the mouth develop a few days before the skin becomes affected. Fever usually is present from the onset.

The eruption is made up of vesicles and bullae surrounded by an erythematous halo. They usually rupture early and become crusted. Grouped iris lesions are frequently present. In most instances the disease was symmetric and extensive. The face, dorsal surfaces of the hands and forearms, neck, trunk, and lower extremities are most frequently involved. Severe itching and burning are common. Ruptured bullae, irregular areas of erythema, and erosions of the soft palate, tongue, cheeks, and pharynx are commonly observed in the mouth. There is crusting and fissuring of the lips, mild conjunctivitis, and lesions of the vulva. Recurrences are rather common, as in ordinary erythema multiforme.

The symptoms are less intense than in other types of erythema multiforme. Loss of weight, strength, and appetite are unusual. In most cases fever from 102 to 104 degrees F. persists from two to six weeks. As a rule, it is more prolonged than in the ordinary type of erythema multiforme. In the blood the leukocyte count is slightly increased and there is occasional eosinophilia. Secondary anemia is frequent.

According to various writers the differentiation of pemphigoid erythema multiforme from certain cases of pemphigus is difficult and in some cases almost impossible. An extremely rapidly appearing pemphigoid eruption with generalized distribution suggests erythema multiforme pemphigoides rather than pemphigus vulgaris, which as a rule becomes generalized only after a period of several weeks or months.

The Stevens-Johnson Type of Erythema Multiforme

There have been numerous papers dealing with a rare clinical syndrome characterized by abrupt onset with symptoms suggesting an acute respiratory infection with marked prostration and elevation of temperature and accompanied by the simultaneous development of edematous areas of erythema of the skin and vesicobullous lesions of the mucous membranes. Within a few days the lesions rupture, producing extensive bright red areas of denudation especially around the mouth, eyes, nose, anus, and genitals. Severe conjunctivitis is usually present. The eyelids may be stuck together by crusted, greenish exudate and erosions. Ulceration and scarring on the cornea may result in partial or complete loss of vision. The disease usually runs a fulminating course for about two weeks when the temperature finally falls. In several series the mortality rate has run about twenty per cent. Some of the patients develop a generalized vesicobullous eruption. Slight leukocytosis (10,000 to 15,000) is usually present. Anemia is unusual. Patients who have the Stevens-Johnson type of erythema multiforme occasionally develop pneumonia. Secondary infection of the bullae may occur. Hyperpigmentation frequently remains after the lesions heal. The average age in Costello's series was twenty-six years although the disease may occur in children. It seems to be more common in the winter and spring and is more frequently seen in males.

Summary

1. The bullous diseases frequently present an extremely difficult diagnostic problem.

2. The greatest confusion exists in attempting to differentiate certain cases of dermatitis herpetiformis from pemphigus.

3. The various diagnostic aids, including morphology, hematologic findings, sensitivity to halogens, response to treatment and course are not infallible.

4. The favorable response of dermatitis herpetiformis to sulfapyridine and the lack of response of pemphigus is probably the best single means of differentiation between the two diseases.

References

1. Costello, M. J.: Sulfapyridine in the Treatment of Dermatitis Herpetiformis. Arch. Dermat. & Syph., 56:614 (Nov.) 1947.
2. Costello, M. J., and Vandow, J. E.: Erythema Multiforme. New York State J. Med., 48:2481 (Nov. 15) 1948.
3. Duhring, L. A.: Dermatitis Herpetiformis. J.A.M.A., 3:225 (Aug. 30) 1884.
4. Duhring, L. A.: M. News, 47:421 (Oct. 17) 1885.
5. Hall, A. F.: Impetigo Herpetiformis in the Male. Arch. Dermat. & Syph., 50:107 (Aug.) 1944.
6. Michelson, H. E.: Personal communication.
7. Milton, S. L.: The Pathology and Treatment of Diseases of the Skin. P. 205. London: R. Harwicke, 1872.

BIRTH RATE INCREASES

According to the Public Health Service the national birth total continued to rise during the first three months of 1953, after setting a new annual record of 3,889,000 registered and unregistered births in 1952.

Births during the first quarter of 1953 were running about 29,000 ahead of the same period last year, an increase of 3 per cent. March was the tenth consecutive month in which the estimated total births topped corresponding monthly figures for the previous year.

The level of births for the first three months is at an annual rate of twenty-five live births per 1,000 population. This is slightly higher than the birth rate for the first quarter of 1952.

Since the end of World War II, more children have been born every year than in any wartime or prewar year. From 2,858,000 of registered and unregistered live births estimated for 1945, the total soared to 3,817,000 in 1947. After dropping to a slightly lower level for the next three years, birth totals reached a new high in 1951 and broke the record again in 1952.

Based on registered births alone, 58,000 more couples had a first child in 1951 than in 1950, according to preliminary estimates. This 5 per cent increase in first-born children was largely a sequel to the marriage upswing that began in June, 1950, at the start of the Korean War. Births of second-born children increased by 2 per cent over 1950.

Births of third children increased by 9 per cent, and of fourth children by 13 per cent. These increases continue a steady rise that has been going on since the end of World War II.

Marriages dropped in the last half of 1951, so it is likely that fewer couples had their first child in 1952 than the previous year. But since total births went up, it probably meant a further rise in the births of second-born or later children during 1952.

DERMO-FUNGOUS ALLERGY

HAROLD G. RAVITS, M.D.
Saint Paul, Minnesota

THIS DISCUSSION is limited to the allergic manifestations of the superficial fungous infections. The study of the immunologic mechanisms in fungous disease closely parallels the allergic processes in tuberculosis. Bloch and Jadassohn and their followers studied extensively the biologic and allergic phenomena in fungous infections and contributed much of the original work in this field, much as Koch and his school in tuberculosis. Experimental studies have been done principally in infections in guinea pigs produced by the species Trichophyton gypsum. It has been shown that the hypersensitivity develops only during the course of an infection and the peak of hypersensitivity is reached some two to three weeks after the lesions are healed and gradually decreases over a period of months after the infection. Primary infections in the guinea pig run their course in three or four weeks with the peak of intensity about the twelfth day. In reinoculations the response is accelerated being most intense within six days and completely healed in ten or twelve days.[3] Similar experiments in man resemble those in the guinea pig as far as the difference between first inoculations and reinoculations are concerned except in man the course of events is less constant and regular. Once an individual has recovered from a fungous disease the entire skin surface including the clinically unaffected areas acquire a state of specifically altered reactivity as evidenced by the more rapid and less severe reaction to reinfection. The evolution, configuration, and involution of the mycotic foci are dependent upon the immunologic state of the skin. When the allergy is strongly developed, the fungi may be destroyed directly; when it is of lower degree, it serves only to inhibit the multiplication of the fungi so that they can again multiply as soon as the immunity retrogresses.

As a rule, allergic hypersensitiveness of the skin is encountered in the deep inflammatory mycoses, though it may develop in superficial mycoses provided they are of long standing. Also the degree of allergy depends in part on the species of fungus, animal species of fungi being more likely to sensitize than the human variety.

A high degree of allergy is manifested by patients with dermatophytids. The term "id" is understood to designate the reaction of a highly allergic skin to a hematogenously distributed organism or its products.

The altered reactivity of the skin can be demonstrated by means of the trichophytin skin test. Trichophytin is prepared from cultures of trichophytons or immunologically related fungi such as epidermophytons and microsporons. An established positive trichophytin reaction appears almost exclusively in susceptible humans or animals who have been infected or otherwise adequately exposed to the specific agents or their products. Trichophytin sensitivity can persist long after the disease process is healed.

The degree of skin sensitivity to trichophytin can be deliberately altered by repeated intracutaneous injections of the specific extract. Reactions to the trichophytin skin test are of very limited diagnostic value. The reaction to trichophytin indicates only that an adequate specific exposure has taken place at some time in the past and does not necessarily mean that an individual is suffering from active trichophytic disease. It is sometimes of value in special problems of differential diagnosis. The usual twenty-four to forty-eight hour papular tuberculin-type reaction is elicited by the intracutaneous injection of .1 cc. of 1:30 to 1:50 dilution of a standard trichophytin. The test is read at twenty-four, forty-eight, and seventy-two hours. Inflammatory erythema and infiltration appear at twenty-four to forty-eight hours and usually persist for two to four or more days and may persist up to several weeks. Persistent reactions may become eczematous, lichenified and scaly. The reaction (1 to 3 cm.) should be considered positive only if the reaction at the trichophytin site is significantly greater than the reaction at the con-

---

Read before the American College of Allergists, Graduate Instructional Course, Chicago, Illinois, April 25, 1953.

From the Division of Dermatology and Syphilology, University of Minnesota (Dr. H. E. Michelson, director), and the Department of Dermatology and Syphilology, Ancker Hospital (Dr. John F. Madden, director).

trol site. A negative reaction indicates that the individual has never had a sensitizing infection with trichophyton or immunologically related fungi or that the individual has been exposed but is in a state of anergy; also it may be that the individual has been exposed to fungi but is still in the incubation period of the infection.

The significance of the urticarial skin test responses to trichophytin is unknown. It is much less common than the tuberculin-type response. The urticarial reaction is read and evaluated fifteen to twenty minutes after the intracutaneous injection of 0.01 to 0.02 cc. of trichophytin. A control test should also be done. Some of the patients showing immediate urticarial responses to trichophytin have circulating passive transfer antibodies of the Prausnitz-Kustner type. The early response may be of occasional diagnostic value owing to the fact that most of the early responses have been found in: (1) chronic Trichophyton purpureum infections; (2) recurrent erysipelas-like involvement of the legs presumably due to fungi[4]; (3) asthma, rhinitis, urticarias presumably due to products of dermatophytes.

Many of the mycotic infections present features which are instructive from the point of view of allergy. Dermatologists have been able to study the effects of allergy on the primary lesions of fungous infections much more intensively than internists can study the relationship between allergy and primary tuberculosis. This is true because in fungous diseases the skin and its appendages are the organs of first infection in most cases and the development and course of the primary lesion and changes in skin allergy are all constantly accessible to observation and investigation.

It has been found that the production of trichophytin sensitivity in a fungus-infected individual as well as the character and course of the disease depend to a great extent upon the species of the infecting fungus. There is a tendency for certain fungi to be more common in animals (zoophilic) and for others to be more common in man (anthropophilic). When zoophilic fungi affect man they generally produce higher degrees of trichophytin sensitivity, greater degrees of inflammation, and a higher incidence of dermatophytids than do the anthropophilic fungi. Also the tissues of the human host have greater degrees of resistance as shown by a lesser degree of infectiousness and greater tendency to spontaneous healing and better response to various forms of therapy. Thus can be demonstrated the common close association between the production of allergic sensitivity and the increase in capacity to overcome infection.

It has been experimentally demonstrated that the local variations in the grade of hypersensitiveness may explain the commonly observed corymbiform or iris-shaped lesions.[1] The refractory free zones that appear in or about healed foci may be regarded as an expression of local immunity which is responsible for spontaneous healing of skin diseases.

The diagnosis of the classic forms of dermatophytids is usually simple and direct. In many cases as in ringworm of the scalp or beard there is a clear sequence of exposure, primary infection, development of allergy, appearance of primary lesions and eruption of the "id." Experimental studies by Williams and Peck have shown that certain eczematous eruptions on the hands are dermatophytids secondary to fungus foci in the skin on the feet, toes and possibly toenails.[2,5] The usual sites on the hands are the sides of the fingers and the palms. The lesions are usually vesicular, simulating dysidrosis. The reason for this localization is unknown but factors considered have been terminal circulation of the hands, contact with fungi producing local sensitization, traumatic factors and sensitization to light. In the classic dermatophytid following a deep infection of the hair follicles, the trunk is usually involved with follicular localization of lichenoid papules and occasionally eruptions simulating a toxic erythema. Constitutional symptoms such as fever, chills, lymphadenitis secondary to kerion are not commonly part of the complex which includes an eruption secondary to tinea pedis. The diagnosis of dermatophytid has been used very glibly in this country without careful observation and study of hand eruptions. Peck has laid down definite criteria. One dictum that a positive blood culture is essential is rather drastic. The following conditions for diagnosis of a dermatophytid are minimal but necessary.

1. There must be a demonstrable focus that contains pathogenic fungi.

2. The intracutaneous trichophytin test gives a positive reaction.

3. Fungi are usually not found in the lesions of the dermatophytid.

4. The secondary rash may be due to irritation of the primary focus by treatment or to a spontaneous inflammatory change. The injection of trichophytin for diagnosis may cause the development of a generalized dermatophytid eruption. The dermatophytid usually disappears spontaneously when the focus has been eradicated. Exceptions to this occur when there are secondary eczematous changes and the rash continues because of sensitivity to other substances or because of the action of primary irritants.

The condition known as keratolysis exfoliativa is often considered as a form of dermatophytid. Here the lesions consist of superficial scaly macules which may coalesce and are localized to the palms or soles. The lesions are at first unruptured empty vesicles.

Fungous infections also play a contributory role in the production of the hypersensitivity to other agents such as drugs and chemicals. Fungous infections can pave the way for a subsequent contact dermatitis because the continuity of the skin is interrupted by the infection thereby permitting the entry of secondary sensitizing substances.

In many cases, the clinical pictures of vesicular, eczematous and scaling dermatophytids of the hands cannot be distinguished from similar eruptions of the hands due to other causes. Even though some of the aforementioned criteria for an "id" eruption prevail, we may have these same findings when hand eruptions are not fungous "ids," but are contact-type eczematoid dermatitis or some other form of eczematous dermatitis. It has been shown that a clearcut contact dermatitis of the feet may be followed by a secondary eczematoid eruption of the hands and the reverse also holds true i.e., a hand eruption followed by secondary changes on the feet. The diagnosis of eczematous dermatophytid of the hands is no doubt being overworked, but there is also no doubt that many eczematous eruptions of the hands will not clear up until fungus foci elsewhere have been adequately treated.

When a fungous focus is found to be the cause of a secondary eruption, the secondary eczematous lesions usually require local antieczematous treatment as used in the treatment of eczema.

To understand the rationale and objectives of treatment, it must be remembered that these fungi do not elaborate any toxin or primarily harmful substance. But it has been shown that fungi produce lesions on the skin because they and their products sensitize the skin both locally and generally. So as far as can be determined, fungi elaborate not toxins but allergens. These fungous allergens often produce an eczematous form of skin hypersensitivity. These organisms multiply in and on dead tissue; hence, they are found in abundance in the dead horny layers of the skin and in the dead macerated or dried debris and scales in and around the hairs and nails.

Infections with monilias produce a skin sensitization to oidiomycin and not to trichophytin. It is probable that trichophytons and perhaps other pathogenic fungi have antigens in common with those contained in penicillin. This may account for vesicular and other reactions resembling fungous eruptions which are commonly seen on hands, groin, et cetera, following penicillin administrations.

Hyposensitization with trichophytin is generally of little value in the treatment of superficial fungous infections and "ids." Trichophytin desensitization is always tedious and like all other immunologic therapy involves the dangers of occasional increased sensitivity, focal flare-ups, exacerbation and extension. This procedure is not advisable as a routine therapeutic measure in ordinary or mild cases. However, in severe recalcitrant cases with full recognition of the relatively slim chance of success the measure warrants careful trial. It is sometimes followed by improvement or even cure when all other attempts have failed. Intracutaneous injections of trichophytin or oidiomycin beginning very carefully with doses below those which produce strong local reactions constitute the usual method.

Both the primary fungous eruptions and the secondary fungous eruptions known as dermatophytids are considered to be allergic manifestations essentially based on specific sensitization of the skin to fungous products. The fungous eruptions are, in general, eczematous. In most instances, they are similar in their pathogenic mechanism to the allergic eczematous dermatoses produced by contact with exogenous eczematogenous allergens. Treatment should be directed at the specific fungous focus and at the eczematous eruption.

(References on Page 608)

INFECTIONS OF THE URINARY TRACT

Helpful Hints on Management

EDWARD N. COOK, M.D.
Rochester, Minnesota

THE TREATMENT of infections of the urinary tract has been of great interest and practical importance for many years. The armamentarium of drugs for management of these infections is vastly different from that of years ago. Nevertheless, in our experience in Rochester, the problem is still a most difficult one at times.

Before going into a detailed discussion of the various chemotherapeutic and antibiotic compounds which are at the disposal of the physician today, it becomes necessary again to review a number of basic concepts concerning the management of these infections. Without this fundamental knowledge the most sincere efforts may amount to naught. Too frequently, better judgment is abandoned in the face of exorbitant claims made by enthusiastic physicians and, more particularly, by some manufacturers. I would in no way detract from the ethical efforts of scientifically minded manufacturers; man in general owes them great thanks for what they have contributed in research concerning synthesis of the new compounds. Nevertheless, it is imperative that certain important facts which have been known throughout the entire field of medicine for years be kept in mind. Certain underlying concepts are necessary precursors of any treatment.

Many years ago I remarked that the story of infections of the urinary tract was a simple story and should be told in a simple way. Today there are a few more complicating factors to reckon with but the fundamental thought is the same, particularly if attention is given to certain basic principles of the art of diagnosis. First to consider is the value of the history obtained from the patient. Frequent urination, burning on urination and urgency are the cardinal symptoms of all infections of the urinary tract, be they primary or secondary. To treat these symptoms with drugs to relieve acute difficulty is justifiable but beyond this such treatment is willful neglect. This triad of symptoms may represent urethritis in the female, prostatitis and posterior urethritis in the male, stricture, or even interstitial cystitis. At this point it will not be superfluous to urge again careful evaluation of the history. When this analysis is studied in conjunction with the findings noted on examination of a properly obtained specimen of urine, the physician then, and then only, is ready to outline the management. If the foregoing are correctly done, ordinary judgment usually will dictate the needed additional diagnostic procedures and the required treatment.

If a female complains of burning and frequent urination but results of examination of urine are completely negative, the physician immediately should think of chronic urethritis; if she complains of urgency, the physician should consider trigonitis or cysts of the vesical neck; if the complaint is of the combination of frequency, nocturia and pain when the bladder is full, but the patient says these are relieved by voiding, the physician should call to mind interstitial cystitis. Too often, in the presence of such symptoms, treatment is by means of numerous new chemotherapeutic and antibiotic compounds, the only benefit of which accrues to the manufacturers of the drugs. Careful evaluation of subjective and objective findings in such cases certainly would lead to proper management.

A discussion of this sort naturally will raise the problem in the mind of the general practitioner, and at times in the mind of the urologist, as to how far one should go in treatment without complete urologic study. Certainly it would not be wise to submit everyone to complete urologic examination because of certain symptoms which suggest infection. However, if certain facts in the history or physical examination indicate the possibility of a coexisting pathologic process, these facts must be recognized and must govern the procedure. Infections of the urinary tract are secondary as often as they are primary and the physician must ever be cognizant of this. Not only is this important from the angle of diagnosis but, more particularly, from the angle of treatment.

Naturally, the type and site of the infection must be ascertained. That proper examination must be made of a properly obtained specimen of urine goes without saying. The specimen must be obtained by catheter from a female or it must be a second-glass specimen if the patient is a male.

From the Section of Urology, Mayo Clinic.

It should be examined grossly, then microscopically under the high dry objective, and finally the sediment should be stained with Gram's stain to ascertain the presence or absence of microorganisms. Culture of the urine is helpful but by no means necessary to good management in the majority of instances.

With the above information at hand, the presence of infection established, and the causative organism known, it would be ideal if there were available a "drug for a bug." However, such a utopian elixir does not obtain and the quicker this is realized the better off everyone concerned will be. There are many reasons why there is no specific against a particular microorganism. First, there is much difference in the sensitivity of the various strains of any organism to any particular medication. Second, but of less importance, is the individual's ability to take the drug and excrete it in the urine. Third, there must exist varying resistance of the different organisms to one or another of the many chemotherapeutic compounds after a period of administration of the drug. This is particularly true of the staphylococci. Consequently, qualification is necessary when statements are made concerning the proper drug to use in management of infections with certain organisms.

In general, the organisms found can be divided into two great groups: the Gram-negative bacilli and the Gram-positive cocci. The former are represented by Escherichia coli, Aerobacter aerogenes, bacteria of the genus Proteus, and the Pseudomonas organisms. Representatives of the latter are the staphylococci, the Streptococcus faecalis, and the hemolytic streptococci. As mentioned previously, there is no "drug for a bug." Consequently, each preparation will be named with a view to listing the organisms usually eradicated by its administration.

Preparations for Administration

Sulfonamide.—My experience with this drug indicates that in any of its many forms it is the most nearly universal urinary antiseptic. It is cheap; it can be given in small doses with few, if any, toxic reactions. Certainly it is effective against the majority of the usually encountered Gram-negative bacilli but not against the Pseudomonas organisms. It is equally effective against staphylococci and streptococci but has little or no effect on the growth of Streptococcus faecalis. It is given orally and, in my experience, a dose of 2.0 gm. daily for a week is sufficient. This drug also is of value when intermittent medication may be desired. A course of medication given for five to seven days of each month for three or four months may be of great value in eliminating a recurring infection.

Penicillin.—This preparation is most useful, when given either alone or in combination with the sulfonamides or streptomycin. Its efficacy seems to be decreased when used with aureomycin or terramycin. The dose is 300,000 to 600,000 units given daily, intramuscularly. It has been of value in treating the usual bacillary infections but not those caused by the Pseudomonas and also has been worthwhile against most coccal infections, at times even against the Streptococcus faecalis.

The experience with penicillin furnishes an example of why dogmatic statements of efficacy of any substance are unwise. In the first few years following the development of penicillin, most organisms of the genus Staphylococcus were completely eradicated by administration of this drug. At present, in our clinic, almost 50 per cent of the staphylococci found are not sensitive to penicillin, either experimentally or clinically. Toxic manifestations are minimal but rather severe skin reactions do occur at times. I do not believe that penicillin is a drug to be given promiscuously.

Aureomycin and Terramycin.—These two antibiotics will be considered together because their action is much the same. The drugs are given orally in divided doses, 250 mg. every six hours. They are particularly of value in treating infections with Streptococcus faecalis and Aerobacter aerogenes. Infections attributable to the Proteus or Pseudomonas organisms are rarely affected. Symptoms of toxemia after administration of these substances are similar but they are more severe and of more common occurrence following use of aureomycin than terramycin. Nausea and vomiting, and more frequently diarrhea, may be troublesome.

At times, following sterilization of the bowel with these drugs as a preoperative measure, severe, fulminating staphylococcal pseudomembranous colitis has developed. While this complication is not of common occurrence, its possibility must be borne in mind.

Chloromycetin.—This drug was briefly my personal choice among all the antibiotics, and from certain standpoints it still is, except that it must be appreciated that a severe toxic reaction has developed in a small percentage of cases. The aplastic anemia to which I refer has developed in some cases after a relatively small dose has been given for only a short time. Other toxic manifestations are nil. The quantity to be administered is 1.0 gm. daily, given in divided doses for five to seven days. However, I believe it should not be used unless studies of sensitivity reveal that the offending organism is sensitive to it alone and the patient is seriously ill.

Polymyxin.—My experience with this antibiotic is extremely limited. Nephrotoxic and neurotoxic symptoms are of such degree that I believe its use is justified only in serious situations where studies of sensitivity show that it alone is of value.

Neomycin.—This is another antibiotic which is toxic at times. It causes certain disturbances of the middle ear similar to those encountered following use of streptomycin. Its use is indicated only if studies of sensitivity show it to be the only drug to which the infecting organism is sensitive.

Erythromycin.—This is well tolerated in most cases. Certain limitations to its use must be appreciated. It is of value only in treating infections with Gram-positive organisms. It has shown no effect on urinary Gram-negative bacilli.

Streptomycin.—A few years ago I was strongly of the opinion that this preparation was of little importance in the field here concerned, with the exception of cases of infection with organisms of the genus Proteus. When the drug was administered to patients suffering from such an infection, and the treatment was supplemented by administration of sulfonamides, the results were good. The poor results against the usual bacillary invaders, coupled with the not infrequent manifestations of toxicity relative to the middle ear, made me hesitant to prescribe the drug. With the advent of dihydrostreptomycin such toxic side effects became minimal; an additional favorable feature is that time of administration is short. Resistance of the infecting organisms to the preparation seems to build up rapidly. This fact should be appreciated in planning dosage; consequently I advise 2.0 gm. daily for two days, followed by 1.0 gm. daily for an additional three or four days.

Mandelic Acid.—Availability of the foregoing preparations should not cause abandonment of an old standby. When renal function is normal, mandelic acid can be given with few toxic reactions, and no danger. This drug holds an important place in the treatment of many bacillary infections and also in treatment of infection with the Streptococcus faecalis.

Arsenic for Intravenous Injection.—Through the ages, progress has left many worthwhile things by the wayside. In years past, many coccal infections responded well to intravenous administration of arsenic. I have given oxophenarsine hydrochloride (mapharsen), 0.03 to 0.04 gm, intravenously, four or five days apart for three injections. The results often are startling.

Chemotherapeutic and Antibiotic Preparations in Combination.—Before leaving the subject of the immediately preceding paragraphs, I should like to mention the increased benefit which at times obtains when these preparations are used in combination. There seems to be a synergistic relationship between the sulfonamides on the one hand and either penicillin or streptomycin on the other hand; also penicillin and streptomycin seem to act synergistically. However, it has been definitely shown that penicillin in combination with aureomycin or terramycin definitely decreases the activity of both drugs of the combination.

Local Treatment

Too frequently, because of the ease of prescribing one of the foregoing compounds, the value of properly administered local treatment has been forgotten. Lavage of the bladder with potassium permanganate, boric acid, or acetic acid, followed by instillation of ½ ounce (15 cc.) of 5 per cent solution of mild silver protein (argyrol) may give quick relief of acute symptoms. At times, continuous lavage with solutions of silver nitrate of increasing strength is of great value in treatment of incrusted cystitis. Here, too, cystoscopy under anesthesia and removal of the incrustations with the heel of the scope or blunt forceps, will hasten recovery. For the extremely irritable bladder, instillations of silver iodide may be of help.

Clinical Entities

Chronic Urethritis.—This troublesome condition is of most common occurrence among females. The urethritis may be granular and there may or may not be cicatricial change. Instillation of a 5 per cent solution of mild silver protein (argyrol) once daily for five or six days, with adequate dilatation to size 32 or 34 French if indicated, is most helpful. Warm sitz baths are useful adjuncts in treatment. Rarely is fulguration indicated and overtreatment must be guarded against.

Chronic Prostatitis.—How much should be done for this condition? First of all, I am certain it rarely causes trouble to elderly men. If a patient is less than thirty-five or forty years of age, I advise regular massage twice weekly for eight to ten weeks, after it has been ascertained that there are no contributing foci in teeth or tonsils. If a patient is more than forty years of age, I usually advise against local treatment unless there are associated symptoms such as burning on urination, dysuria, frequency, or distress in the suprapubic region or groin. Perineal pain and testicular distress are not attributable to chronic prostatitis.

Interstitial Cystitis.—This miserable condition often requires the most careful handling. Overdistention of the bladder under anesthesia and instillation of solution of silver nitrate have proved helpful. Fulguration of the inflamed portions occasionally has been beneficial. Cortisone and alpha-tocopherol have been given orally with varying results.

Amicrobic Pyuria.—This rare but interesting clinical entity usually is attended with most severe symptoms. There is a high degree of pyuria but the urine is free of any known organisms. In the course of differential diagnosis, tuberculosis of the urinary tract always must be excluded. Foci in other parts of the body may contribute to the condition. Local treatment, chemotherapeutic drugs and antibiotic preparations are of little value. Intravenous administration of arsenic is almost a specific.

The Most Important Consideration

In closing, I would like to make a solemn plea for complete absence of dogma in treating infections of the urinary tract. What is sauce for the goose is not always sauce for the gander. Each case must be studied individually and, above all, the possible relationship to the infection of a coexisting lesion in the urinary tract must ever be borne in mind. Too often, the first sign of a vesical neoplasm may be an acute infection of the urinary tract, which subsides with medication. If the patient is of middle age or older, cystoscopy is a dependable way to exclude this possibility. Again let me say that treatment of infections of the urinary tract, while it may seem simpler than it was ten years ago, is actually much more involved if it is done in other than hit-or-miss style. Certainly, the more cases of such infection which I see, the more I feel that I must learn more about them.

DERMO-FUNGOUS ALLERGY

(Continued from Page 604)

References

1. Epstein, S., and Gruenmandel, S.: Untersuchung ueber die spontane Abheilung von oberflaechlichen Trichophytien. Arch. F. Dermat. u. Syph., 161:395, 1930.
2. Peck, S. M.: Epidermophytoses of feet and epidermophytids of the hands. Arch. Dermat. & Syph., 22:40, 1930.
3. Sulzberger, Marion B.: Dermatologic Allergy. Springfield, Ill.: Charles C Thomas, 1940.
4. Sulzberger, Marion B.; Rostenberg, Adolph, Jr., and Goetze, Dorothy: Recurrent erysipelas-like manifestations of the legs. Their relationship to fungous infections of the feet. J.A.M.A., 108:2189, 1937.
5. Williams, C. M.: Enlarging conception of dermatophytosis. Arch. Dermat. & Syph., 15:451, 1927.

MINNESOTA MATERNAL MORTALITY STUDY

By the Maternal Mortality Committee of the Committee on Maternal Health of the Minnesota State Medical Association

A CONTINUOUS Statewide Maternal Mortality Study is being carried out as a cooperative study between the Minnesota State Medical Association and the Minnesota Department of Health. It is being conducted by a group of physicians known as the Minnesota Maternal Mortality Committee. This Committee was appointed by the Committee on Maternal Health of the Minnesota State Medical Association, and its members, representing various geographic areas of the state, are serving without remuneration. The funds for the study are being provided by the State Department of Health and a member of that organization, the Chief of the Section of Maternal and Child Health, is also a member of the Maternal Mortality Committee. Two well-trained obstetricians perform the field work of the study and they meet with the committee at various intervals. This study is patterned almost entirely after the previous study which was carried out in the State of Minnesota in 1941-1942.[3]

This report is a general summary of the first year of the current study, from April 1, 1950, through March 31, 1951. It is felt that to better understand subsequent tables and comments, the setup of this study should be discussed briefly. Prior to the onset of the study, all hospitals, city and district health departments, were requested to report maternal deaths promptly to the State Department of Health. Also physicians throughout the state were notified of the study through the Newsletter of the Executive Secretary of the State Medical Association and in addition, by means of notation in Minnesota Medicine. Reports of maternal deaths were made directly to the Section of Maternal and Child Health or indirectly through the Section of Vital Statistics of the State Department of Health. An appointment was then made promptly with the involved physician and the obstetrician-investigator set out to obtain all data regarding the death. The field-work consisted of reviewing the hospital medical records, prenatal records and interrogating all persons who were involved—i.e., physician, consultants, anesthetist, pathologist, interns, residents, nurses, et cetera. Thus an exhaustive amount of data was obtained; in fact, an eighteen page questionnaire was completed for each death. When deemed necessary, x-rays, pathological material, et cetera, were brought to the Committee for review. The obstetrician-investigator then summarized the case study. In his preparation of the case summary additional consultation was obtained from non-obstetrical specialists as the need arose. The case summary was next reveiewed by one of the Committee members. Finally, at periodic intervals, the case summaries were presented to the Committee as a whole where final decisions were made as to cause of death, criticism of the management of the case as to whether care was contributory or not contributory to the death of the patient, completion and adequacy of autopsy, completeness and accuracy of death and birth certificates, and final assessment was made as to preventability of, and responsibility for, the death. The case summaries were always presented anonymously where free discussion was possible and unbiased opinions were thus rendered.

The following minimum requirements for adequate obstetrical care were adopted by the Minnesota Maternal Mortality Committee:

Minimum Requirements for Adequate Obstetrical Care

First prenatal visit

1. Adequate history and general physical examination with accurate follow-up of any abnormality revealed by these.
2. Pelvic mensuration to include intertuberous diameter, diagonal conjugate and palpation of sacrum and spines.
3. Laboratory workup—blood serology for syphilis, hemoglobin, urinalysis and Rh determination.

Routine prenatal visits

1. Blood pressure determination.
2. Urinalysis, especially for albumin.
3. Weight determination.
4. Abdominal palpation during last two months of gestation.
5. Reasonably adequate study of abnormalities presenting themselves during these visits.

General Summary of study made from April 1, 1950, to March 31, 1951.

Labor and delivery

1. Adequate use of generally recognized obstetric procedures.
2. Observance of adequate asepsis.

Postpartum care

1. Reasonable promptness in the recognition of abnormalities.
2. Reasonable promptness in the institution of adequate treatment.

Postmortem examination

1. Completeness in itself or as an adjunct to clinical observation.

Death certificate

1. Accuracy in assignment of cause of death.
2. Completeness of data requested.

Birth or Stillbirth certificate

1. Completeness in reporting desired data.
2. Accuracy of data.

Death certificate of child

1. Accuracy in assignment of cause of death.
2. Completeness of requested data.

The maternal mortality rate is intended to be a measure of risk of death from childbirth. It is the number of deaths of women ascribed to pregnancy, childbirth and the puerperium (as set out in Class XI of the Manual of the International List of Causes of Death) per 1,000 live births, over a given time, usually taken as one year.

Chapter XI, number 640-689 (pages 178-188) includes:

pyelitis and pyelonephritis of pregnancy and puerperium;
toxemias and sepsis of pregnancy and puerperium;
placenta previa and abruptio, and other hemorrhage;
ectopic pregnancy, abortion;
anemia of pregnancy;
hydatidiform mole;
puerperal phlebitis;
pulmonary embolism;
puerperal psychosis, and
other related causes.

As in the previous study of 1941-1942,[3] all deaths, associated with pregnancy and the postpartum state are included in this report. The literature makes it clear that there is not uniformity of opinion as to what constitutes a maternal death. The Committee felt that in all fairness it was necessary to present all the deaths associated with pregnancy and the postpartum state so that there could be no question of selection. With the presentation of all data, anyone so desiring can calculate corrected figures for so-called "obstetrical deaths." The time limit of the postpartum state is another controversial issue which has not been settled. Some reports include deaths six weeks, others three months and still others six months postpartum. Unfortunately disease processes do not limit themselves to certain time limits. For uniformity, the Committee adopted the three-month postpartum period previously used by the Bureau of Census with the exception of chorionepithelioma deaths. Here is a definite disease of pregnancy, i.e., of the chorionic epithelium and the Committee set no time limit with respect to the inclusion of these deaths in this study. The value of maternal mortality studies such as this has been well established and is common knowledge. No further comment will be made in this regard except to emphasize that the objective of this study is to lower the maternal mortality rate in the State of Minnesota. Certainly none of us is infallible and lessons learned from the study should have an effect with regard to the management of subsequent obstetric patients.

TABLE I.
SOURCE OF REPORTING OF MATERNAL DEATHS

		No.	Per Cent
Division of Vital Statistics		30	44.1
City Health Departments		17	25.0
Other Sources		21	30.9
Original physician	3		
Field investigator of study	3		
Medical social workers	2		
Consultant	1		
Nurse	1		
Medical student	1		
Non-involved physician	1		
Matching birth and death certificates	9		
Totals		68	100.0

The source of reporting of material deaths is shown in Table I. In 69 per cent of the deaths, notification came through the usual channels of the Division of Vital Statistics and the City Health Departments through the Section of Vital Statistics. What is more important is the fact that twenty-one deaths, (31 per cent) would have been missed had the usual methods of reporting been relied upon since pregnancy or postpartum state was not mentioned on the death certificates of these. In other words, using the criteria set for this study, the maternal mortality rate as determined from the death certificate for the full

TABLE II. INTERVAL BETWEEN DEATH OF PATIENT AND INVESTIGATION

Interval	No. Deaths	Per Cent	
1 wk.	5	7.4	76.6
2 wks.	5	7.4	
4 wks.	11	16.2	
5 wks.	5	7.4	
6 wks.	7	10.3	
7-8 wks.	7	10.3	
9-12 wks.	12	17.6	
4 mo.	4	5.9	
6-9 mo.	4	5.9	
11 mo.	3	4.4	
12-17 mo.	5	7.4	
Totals	68	100.0	

TABLE III. MATERNAL MORTALITY (PER 1000 LIVE BIRTHS) ACCORDING TO AGE OF PATIENT AT LAST BIRTHDAY

Age	No. Mat. Deaths	No. Live Births	Mat. Mort. Rate
15-19	2	5,719	0.349
20-24	11	23,572	0.466
25-29	13	22,959	0.566
30-34	19	14,296	1.32
35-39	14	7,404	1.89
40-44	6	1,972	3.04
45 and over	3	122	24.6
Not stated		30	
Totals	68	76,074	0.894

year of this study would be underestimated by 31 per cent. In three instances the original physical notified the Committee of the death yet failed to mention pregnancy or postpartum state on the death certificate. In the current death certificate form being used by the Section of Vital Statistics, if pregnancy or childbirth complications contributed to the patient's death, these should be listed under "Disease or Condition Directly Leading to Death." If not, the pregnancy state or postpartum state (three months) should be noted under "Other Significant Conditions." As a further check and in addition to the twelve deaths already discovered by various individuals as listed in Table I, the Section of Vital Statistics performed the difficult task of cross-matching death and birth certificates. This was accomplished in the following manner. The death certificates of all women between the ages of fifteen to forty-five dying during the current year of study were taken to the files of birth and stillbirth certificates and these were searched to determine whether a reportable birth had been registerd under the name of the deceased within three months of the date of death. As noted in Table I the search revealed nine additional deaths. Even with the cross-matching technique, four deaths would have been missed since of the twenty-one discovered by additional effort, four died undelivered and thus there were no reportable births for these. The implication of discovering twenty-one deaths which would have been missed is that the yearly Minnesota maternal mortality rate is being underestimated by approximately 0.18 points. The 1950 rate of 0.58 per 1,000 live births[4] should in reality be 0.76. It should be kept in mind that the above calculation represents all deaths associated with pregnancy and the puerperium as adopted by the Committee, in contradistinction to corrected rates of the State Department of Health—i.e., including only so-called "obstetrical deaths." Further analysis of the twenty-one deaths reveals that three were actually the result of obstetrical complications and another was due to rheumatic heart disease where pregnancy effect is certainly clear. The remainder were three suicides, one homicide, two automobile accidents, three brain tumors, two with brain pathology (?tumor, ?hemorrhage), one leukemia, one ruptured intra-cranial aneurysm, one spontaneous hemothorax, one acute yellow atrophy following infectious hepatitis and in two instances the cause of death was not determinable.

The time interval between death of the patient and the investigation is given in Table II. Three-fourths of the deaths were investigated within three months of the time of death. The longer interval of six months and beyond concerned the deaths which were discovered by additional effort as already noted in Table I. The cross-matching procedure was not done until the end of the current year of study which was the reason for delay. Because of poor medical records, about which more will be said later, the sooner the death is investigated and while all details are fresh in the minds of those concerned, the more accurate the data will be. For this reason, for subsequent yearly studies, the State Department of Health requires all hospitals and physicians to notify the State Department of Health within three days of the time of death of a patient dying in association with pregnancy or the postpartum state.

Analysis of maternal mortality (per 1000 live births) according to the age of the mother at the last birthday is recorded in Table III. This shows a progressive increase in the mortality rate with each older age bracket. These figures follow the trends shown by Yerushalmy, Palmer and Kramer[3] and Dickinson and Walker.[4] The mortality

TABLE IV. MATERNAL MORTALITY (PER 1000 LIVE BIRTHS) ACCORDING TO ORDER OF BIRTH

Order of Birth	No. Mat. Deaths	No. Live Births	Mat. Mort. Rate
1	16	21,280	0.752
2	15	22,922	0.654
3	10	14,812	0.675
4	11	7,933	1.39
5 and 6	10	6,002	1.67
7 and over	6	3,106	1.92
Not stated		19	
Totals	68	76,074	0.894

TABLE V. TIME OF OBTAINING SEROLOGICAL TEST FOR SYPHILIS IN CURRENT PREGNANCY

	No.	Per Cent
Not taken (all registered)	31	45.6 }55.9
Not taken at 1st visit (all registered)	7	10.3
Not taken (unregistered)	3*	4.4
Taken at 1st visit	24	35.3
Taken at hospitalization (unregistered)	3	4.4
Total	68	100.0

*Two were hospitalized before death but blood serology was not taken.

TABLE VI. ANALYSIS OF MATERNAL DEATHS ACCORDING TO RH DETERMINATION

	Primip.	Multip.	Total	Per Cent
None				
Unregistered	0	2	2	2.9
Registered	5	18	23	33.8 }50.0
At hospitalization				
Registered	3	8	11	16.2
Unregistered	2	1	3	4.4
At 1st visit or prev. preg.				
Registered	5	21	26	38.2
Unregistered	0	1	1	1.5
Prenatally after 1st visit	1	1	2	2.9
Totals	16	52	68	99.9

rate of patients forty to forty-four is ten times that of patients fifteen to nineteen. There were three deaths in the forty-five and over age bracket even though there were only 122 live births for this age group, giving a staggering mortality rate of 24.6 per cent. The youngest patient was eighteen and the oldest forty-seven. All were white except one Indian and one Mexican. Of the sixty-eight mothers, three were illegitimately pregnant. There were a total of sixty-eight deaths among 76,074 live births for an uncorrected mortality rate of 0.89. The sixty-eight maternal deaths produced 162 motherless children. The socio-economic aspect of this is clear.

Table IV shows maternal mortality (per 1000 live births) according to order of birth. Sixteen (23.5 per cent) of these mothers were primigravidas and the remainder (76.5 per cent) were multiparas. The maternal mortality rate with the first pregnancy is higher (0.7 per cent) than with the second and third pregnancies (0.6 per cent, respectively), but rises appreciably with increasing parity. Again these trends compare with those of Yerushalmy, Palmer and Kramer.[5] Since the youngest mothers are generally of lower parity and older mothers of higher parity, an attempt was made to correlate age and order of birth by keeping one of these factors constant but no significant data was obtained since this series is so small.

Various phases of prenatal care are considered in the next four tables. Obtaining a blood test for syphilis early in the prenatal workup of a patient has long been considered a standard procedure essential for adequate prenatal care. The time of obtaining this test in the current pregnancy is analyzed in Table V. Thirty-one (45.6 per cent) of these mothers had no serology taken even though they were registered. By registered is meant that the patient engaged the services of a physician for prenatal care. In seven instances (10.3 per cent) the test were taken after the first visit and in three instances (4.4 per cent), the test was not obtained until hospitalization. It is difficult to comprehend this failure of physicians to obtain a blood test for syphilis since laboratory facilities of the State Department of Health are made available without charge. Since almost one-half (46 per cent) of these mothers did not have the test taken even though they were registered, one wonders what percentage of mothers surviving pregnancy and the postpartum state are receiving the test. One encouraging bit of improvement is to be noted, however, in comparing this data with that of the previous study in 1941-1942.[3] Whereas 62 per cent had no serology in 1941-1942 study, this decreased to 46 per cent for the present study.

The importance of Rh determination in the obstetrical patient has also been well established. In Table VI the maternal deaths are analyzed according to Rh determination. It is seen that twenty-three mothers (33.8 per cent) had no Rh determination even though they were registered patients and eleven (16.2 per cent) did not have the test until after delivery even though they were also registered. In other words, 50 per cent of the registered patients had no Rh determination done at all or until after delivery which again illustrates the faulty type of care these mothers received.

TABLE VII. PELVIC MENSURATION

		No.	Per Cent	
Not measured		38	55.9	67.7
Registered	32			
Unregistered	6*			
Incompletely measured		8	11.8	
Registered	8			
Completely measured		22	32.4	
Normal	22			
Totals		68	100.1	

*Five were hospitalized before death.

TABLE VIII. PRENATAL CARE

	No.	Per Cent	
None (all unregistered)	6	8.8	
Adequate	15	22.1	
Faulty and contributory	14	20.6	69.2
Faulty but not contributory	32	47.1	
Faulty but contributiveness not determinable	1	1.5	
Totals	68	100.1	

TABLE IX. PLACE OF DEATH TABULATED WITH PLACE OF DELIVERY

Place of Death	Place of Delivery		No.	Per Cent
Hospital			56	82.4
	Hospital	41		
	Undelivered	14		
	Home	1		
Home			11	16.2
	Hospital	6		
	Undelivered	3		
	Home	1		
	M.D.'s office	1		
Highway (accident)			1	1.5
	Hospital	1		
Totals			68	100.1

Pelvic mensuration is recorded in Table VII. Slightly over two-thirds of these mothers had no pelvic mensuration or incompletely measured pelvis (less than the minimum requirements adopted by the Committee). Of the sixty-two patients (91 per cent) who were registered, 40, or 65 per cent, had no pelvic mensuration or less than required. One death was directly attributable to the fact that the pelvis was incompletely measured. This patient was an essential primigravida who had a transverse presentation at thirty-six weeks gestation which reverted to a floating vertex at term. These warning signs still did not stimulate the physician to at least complete the pelvic mensuration or obtain x-ray pelvimetry. After seventeen hours of good labor, simple anteroposterior and lateral films of the pelvis were obtained because the vertex was not engaged. These films were reviewed by the Committee and revealed a rachitic pelvis with probable inlet and midpelvic contraction. Certainly accurate x-ray pelvimetry was in order. Following a prolonged, obstructed labor, high forceps extraction was attempted but failed. The infant expired soon after the forceps attempt. Patient was then fed juices and water and was taken back to the delivery room where midforceps extraction was attempted under ethylene gas general anesthesia. She vomited and became cyanotic. Suction was applied, oxygen administered and her color returned to normal. Patient was then re-anesthetized, again vomited, aspirated, and remained cyanotic. Difficult midforceps extraction of a stillborn infant was then carried out under local anesthesia. She expired as a result of aspiration (anesthetic death) but the undetected pelvic contraction was the underlying cause of the difficulty. Another patient's death was indirectly attributable to lack of pelvic mensuration. She was a secundigravida whose first pregnancy was terminated by classical cesarean section because of "outlet contraction." No clinical measurements were available but the physician stated that the transverse interspinal diameter was small since this would not admit his fist. Simple anteroposterior film of the pelvis had been taken and was available to the Committee for review. This revealed a typical gynecoid inlet, normal sidewalls, small blunt spines and normal pubic angle. The same physician managed her current pregnancy and decided upon repeat cesarean section for delivery, the indication being "outlet contraction and previous cesarean section." She expired during the procedure as a result of respiratory paralysis due to incompetently applied spinal anesthesia in which 20 mg. of pontocaine was used. In one instance the physician deliberately falsified pelvic measurements on the hospital chart. When interrogated about this, his reason was that "these were required to be on the chart by the American College of Surgeons."

Considering the criticism of prenatal care as a whole (Table VIII), it is seen that the care was judged faulty by the Committee in 69 per cent of the cases. The faulty care contributed directly to the patient's death in 21 per cent.

The question arose as to whether lack of hospitalization was a factor in the production of these mortalities. In Table IX, place of death is tabulated with place of delivery. All but five patients (92.6 per cent) were hospitalized for delivery, or for illness if they died undelivered, and thus lack of hospitalization can be exonerated. In

TABLE X. ATTENDANT AT DELIVERY

		No.	Per Cent	Per Cent Excluding Those Who Died Undel.
Died undelivered		17	25.0	
Unattended		1	1.5	1.9
Nurse		3	4.4	5.9
Physician in gen. pract.		28	41.2	54.9
Obstetrician		13	19.1	25.5
Board Diplomates	8			
Board Qualified	3			
Self-styled	2			
Obstetrics resident		3	4.4	5.9
Midwife		1	1.5	1.9
Self-styled gen. surg.		1	1.5	1.9
Psychiatrist		1	1.5	1.9
Totals		68	100.1	99.8

TABLE XI. DURATION OF GESTATION AT DELIVERY OR AT DEATH IF DIED UNDELIVERED

Stage of Pregnancy	Duration of Gestation		Died Undelivered	No.	Per Cent
Abortion				15	22.1
	6 wks.	2	2		
	11-13 wks.	6	3		
	18-21 wks.	2			
	24-28 wks.	5	1		
Premature				10	14.7
	29-32 wks.	5	2		
	33-34 wks.	5	2*		
Term				41	60.3
	36 wks.	2			
	37-38 wks.	8			
	39-40 wks.	25	4*		
	41-43 wks.	6	3*		
Postmature				2	2.9
	41 wks.	2			
Totals			17	68	100.0

*One of these delivered by postmortem cesarean section.

TABLE XII. PRESENTATION OF FETUS AND DURATION OF PREGNANCY

Presentation	Duration of Pregnancy		No.	Per Cent
Vertex			53	76.8
	Abortion	2		
	Premature	8		
	Term	41		
	Postmature	2		
Breech			2	2.9
	Abortion	1		
	Term	1		
Unknown			14	20.3
	Abortion	12		
	Premature	2		
Total			69*	100.0

*68 patients—1 set of twins.

TABLE XIII. TYPE OF DELIVERY AND DURATION OF PREGNANCY

Type	Duration of Pregnancy		No.	Per Cent	Per Cent Excluding Those Who Died Undel.
Died undelivered			17	24.6	
	Abortion	6			
	Premature	4			
	Term	7			
Spontaneous			24	34.8	46.2
	Abortion	5			
	Premature	4			
	Term	15			
Operative			28*	40.6	53.8
	Abortion	4			
	Premature	2			
	Term	20			
	Postmature	2			
Totals			69**	100.0	100.0

*See Table XIV.
**68 patients—1 set of twins.

1950, 98.3 per cent of all births in the state occured in hospitals.[4]

Attendant at delivery is given in Table X. Seventeen, or 25 per cent, of the patients died undelivered and all but one had physician care. The one patient unattended at delivery (spontaneous abortion at home), subsequently had physician care. Nurses were in attendance for delivery in three instances because of the rapidity of the process but the physicians arrived for delivery of the placenta. All of these had physician prenatal care. Physicians, as noted in the table, were in attendance for the remainder except in one instance where a midwife was present. She was responsible for the patient's death since she insisted on attending the delivery at home and the patient died of postpartum hemorrhage due to retained placenta. In summary then, all but two patients (97 per cent) had physician care. In 1950, physician attendance for births in the state was 99.8.[2]

Duration of pregnancy at delivery or at death if the patient died undelivered is listed in Table XI. Gestation of less than twenty-eight weeks or in the absence of a reliable history, delivery of a fetus weighing less than 1,500 grams or measuring less than 35 cm. in crown-heel length, was classified as abortion. In the absence of a reliable history, pregnancy was considered as term if the fetus weighed at least 2,500 grams and/or measured at least 45 cm. in crown-heel length. Excessive size was diagnosed if the fetus weighed 4,000 grams or more. As shown in the table, almost two-thirds (63 per cent) of the deaths occurred at term or past term. Three postmortem cesarean sections were done, none of which was indicated. Two were done ten and eighteen minutes, respectively after death. Credit for the third one goes to an undertaker with the indication being monetary. The patient was an eclamptic and died undelivered at term. The undertaker told the husband the distorted fact that a state law required him to evacuate the fetus. Accordingly, the fetus was evacuated and two funerals were held.

Data pertaining to presentation of the fetus and duration of pregnancy is shown in Table XII. Seventy-seven per cent of the patients had vertex presentation, 3 per cent uncomplicated breech and in 20 per cent the presentation was unknown (in the abortion-premature group where presentation was no factor). Malpresentation was certainly no serious factor in the production of these deaths.

TABLE XIV. ANALYSIS OF THE 28 OPERATIVE DELIVERIES

Type of Operative Delivery	No.	Indicated	Not Indicated	Quest. Indicated	No. Contrib. to Death
Low forceps	11	7	4		1
Cesarean section	9	6	1	2	3
Mid forceps	1		1		1
High forceps	1		1		
Hysterotomy	1	1			
Subtotal hyst.	1			1	1
Breech extraction	1	1			
Accouch. force (man. dil. of cervix, version and ext.)	1		1		1
Version and extraction	1		1		1
D & C for inev. abort.	1	1			1
Totals	28	16	9	3	9 (32.1 per cent)

TABLE XV. ANALYSIS OF CESAREAN SECTIONS ACCORDING TO TYPE, INDICATION AND CAUSE OF DEATH

Type	Indication	Cause of Death
1. Classical	Two prev. classicals C.S.	Spinal shock and resp. paralysis
2. Classical	Previous classical C.S.	Spinal shock and resp. paralysis
3. Classical	Art. tox. with acute pre-eclamp.	Shock of undetermined origin
4. Classical	Prob. pl. prev., primipara 2 wks. overdue with large baby	Hemorrhagic shock—? atony ? dyscrasia
5. Classical	Placenta previa	Gen. peritonitis, wound dehiscence
6. Classical	Moribund pt. at 28 wks. with brain tumor	Brain tumor
7. Low cerv.	Rh isoimmunization	Brain tumor
8. Low cerv.	Stem cell leukemia	Stem cell leukemia
9. Radical	Myoma of fundus (6 cm.)	Peritonitis and prob. pulm. emb.

Data regarding type of delivery and duration of pregnancy are shown in Table XIII. Excluding the seventeen who died undelivered, 46 per cent of these patients delivered spontaneously and 54 per cent were delivered by operative means. Further analysis of the twenty-eight operative deliveries is recorded in Table XIV. Only 16 (57 per cent) of these procedures were indicated and one-third of the procedures contributed directly to the patients' deaths. Thus radicalism played a prominent part in the demise of these patients. In a summary of this sort, presentation of details of these operative deliveries is not possible. In all likelihood this aspect will receive further attention in subsequent publications. One comment is in order, however. The procedure of accouchement force, which is never indicated, led to one patient's death. The cesarean sections comprised almost one-third of all the operative deliveries and of the nine, six were indicated. Further analysis of the cesarean sections according to type, indication and cause of death is shown in Table XV and is self-explanatory. Two-thirds of the cesarean sections were classical in type and it seems strange that the established superiority of the low cervical type has not yet been accepted. Comparing the cesarean section problem with the previous study of 1941-1942,[3], it is seen that all nine sections of the present series were elective whereas of the twelve in the previous series, five were non-elective (from eight to 120 hours after the onset of labor).

Analysis of the total operative procedures (obstetric and non-obstetric) done or attempted upon thirty-eight patients is recorded in Table XVI. In this general summary it is not possible to present details of these procedures. Of the sixty-one procedures, only twenty-eight, or 46 per cent, were indicated and 17 (28 per cent) contributed to the death of the patients. This again illustrates that radicalism was a prominent factor in the production of these deaths.

Table XVII analyzes the maternal deaths according to the anesthetic and anesthetist for delivery. Of the sixty-eight deaths in this series, forty-two had some form of anesthesia as shown in the table. The danger of inhalation anesthesia in the obstetric patient because of onset of labor after meals, delayed emptying time of the stomach, et cetera, is common knowledge. In spite of this fact, of the forty-two anesthetics, twenty-five, or 60 per cent, were inhalation anesthetics. Two deaths were directly attributable to this type of anesthesia. The patients were fed during labor, received inhalation anesthesia, vomited and aspirated. Realizing that the availability of competent anesthetists for the smaller hospitals in the state is an acute problem, it would seem that local anesthesia is the ideal solution. Here is a procedure which is safest for both mother and child and the technique is simple and easy to master. Of the forty-two anesthetics administered, only 10, or 24 per cent, had local infiltration alone. It seems strange that this simple procedure has not gained more favor. Of the remaining anesthetics given, six were spinal and one was caudal. Two patients lost their lives as a result of incompetent spinal anesthesia. One patient received 120 mg. of novocaine for cesarean section (twice the safe maximum dose), was tilted in slight Trendelenburg, no intravenous fluids were started, no blood pressure cuff was applied, only 2.5 mg. of neosynephrine was given intramuscularly and she was being checked occasionally by the circulating nurse regarding color and pulse. Two physicians were performing the surgery and a third was standing around to take the baby. His services would have been much more useful had he been at the head of the table

TABLE XVI. ANALYSIS OF TOTAL OPERATIVE PROCEDURES DONE OR ATTEMPTED UPON 38 PATIENTS

Operation	No.	Indicated	Not Indicated	Quest. Indicated	No. Contrib. to Death
Low forceps	11	7	4		1
Cesarean section	9	6	1	2	3
Uterine tamponade	7	6	1		1
Surg. ind. of labor (memb. rupt.)	5		5		
Vaginal tamponade	3		3		
Postmortem cesarean section	3		3		
Mid forceps	2		2		2
High forceps	2		2		1
Version and extraction	2		2		1
Curettage (postpartum)	2	1		1	1
Suture of lacerated cervix	2	2			
Sub. hyst. (for p.p. hemorrhage)	2		2		2
Hysterotomy (ther. abortion)	1	1			
Pomeroy sterilization (p.p.)	1		1		1
Cornual resection (at hysterotomy)	1	1			
Manual dilation of cervix	1		1		1
Breech extraction	1	1			
Dilatation and curettage	1	1			1
Manual removal of placenta	1		1		
Ligation of uterine artery	1		1		
Sub. hyst. and bil. S.O. (Chorio)	1	1			
Sub. hyst. (ther. abortion)	1			1	1
Closure of wound dehiscence	1	1			1
Totals	61	28	29	4	17 (27.8 per cent)

TABLE XVII. ANALYSIS OF MATERNAL DEATHS ACCORDING TO ANESTHETIC AND ANESTHETIST FOR DELIVERY

	Accoucher	Nurse Anesth.	Nurse	M.D. Anesth.	None	Totals	No. Contrib. to Death
None, died undelivered					16	16	
Died undelivered							
N_2O—attempted del.		1				1	1
Local infiltration	10					10	
Local +open drop ether	1*					1	
Local + Baird's sol. + N_2O	1**					1	
Spina	5***			1		6	3
Caudal	1					1	
Ether (open drop)		2	3			5	3
N_2O		2	1			3	2
N_2O +ether		2	1			3	
Ethylene		2				2	1
Ethylene +cyclo.		1				1	
Cyclo. + N_2O		1		1		2	
Vinethene (open drop)			1			1	1
Chloroform (open drop)	1					1	
Baird's sol. + N_2O		1		1		2	1
Baird's sol. +ethylene		1				1	
Pentothal + N_2O		1				1	
None for delivery					10	10	
Totals	19	14	6	3	26	68	12 (28.6 per cent)

*Open drop ether by general physician.
**Baird's sol. + N_2O by M.D. anesth.
***Sodium pentothal by general physician.

observing the patient. She expired twenty minutes following the injection of novocaine as a result of respiratory paralysis and shock. The other patient received 20 mg. of pontocaine with dextrose for cesarean section (four times the safe maximum dose for the pregnant patient) and the head of the table was not elevated until the anesthesia had reached the nipple line. She likewise expired as a result of respiratory paralysis and shock. Of the forty-two anesthetics administered only three (7 per cent) were given by physician-anesthetists, six (14 per cent) by nurses without previous anesthesia training, fourteen (33 per cent) by nurse-anesthetists and nineteen (45 per cent) by the obstetrician.

TABLE XVIII. DEATH INTERVAL OF MOTHER AFTER BIRTH OF FETUS CORRELATED WITH CAUSE OF DEATH WITHIN FIRST 24 HOURS

	No.	Per Cent	Per Cent Excluding Those Who Died Undel.	Cause of Death				
				Hemorr. Shock	Unexpl. Shock	Tox.	Anesth.	Misc.
Undelivered*	17	25.0						
Within 1st hr.	5	7.2	9.8} 39.2	2	1		2	
From 2-12 hrs.	12	17.6	23.5	4	2	3	1	2**
From 13-24 hrs.	3	4.4	5.9	1		1		1***
In 1st week	10	14.7	19.6					
In 1st month	8	11.8	15.7					
In 2nd month	4	5.9	15.7					
In 3rd month	8	11.8	15.7					
9 mo. p.p. (Chorio)	1	1.5	1.9					
Totals	68	99.9	99.9					

*Includes 3 patients delivered bv postmortem cesarean section.
**One poliomyelitis and one pituitrin shock.
***Peritonitis (ruptured appendix).

TABLE XIX. CARE IN LABOR AND/OR FOR DELIVERY

		No.	Per Cent
Adequate		21	30.9
Contributiveness not determinable		1	1.5
None, (midwife care)		1	1.5
None, del. at home unattended (ab.)		1	1.5
None, died before labor		11	
Not hospitalized	3		4.4
Hospitalized	8		
Adequate hospital care	3		4.4
Faulty hosp. care but not contrib.	1		1.5} 55.9
Faulty hosp. care and contrib.	4		5.9} 44.1
Faulty and contributory		26	38.2
Faulty but not contributory		7	10.3
Totals		68	100.1

TABLE XX. POSTPARTUM CARE

		No.	Per Cent	Per Cent Excluding Those with No p.p. Care
None, died undelivered		17	25.0	
Hospitalized	14			
Not hospitalized	3			
None, expired at delivery		2	2.9	
None, (midwife care)		1	1.5	
Adequate		18	26.5	37.5
Faulty but not contributory		3	4.4	6.2} 62.5
Faulty and contributory		27	39.7	56.3
Totals		68	100.0	100.0

The death interval of the mother after birth of the fetus correlated with the cause of death within the first twenty-four hours is recorded in Table XVIII. Considering only those patients who delivered, twenty or 39.2 per cent expired within the first twenty-four hours following delivery. It is seen that one-half of these (ten) expired as result of shock and the remainder due to toxemia, anesthesia and miscellaneous causes.

Considering entire care during labor and/or for delivery (Table XIX), the Committee assessed care as adequate in only 30.9 per cent. Care was faulty in some aspect in 56 per cent and contributory to the death of the patients in 44 per cent.

An evaluation of postpartum care is summarized in Table XX. Of the patients receiving postpartum care, only 37.5 per cent had care which was considered adequate and the remainder (62.5 per cent) had faulty care. Of the patients with faulty care, in 56 per cent of the instances, this care contributed to the death of these patients.

Adequacy of consultation is analyzed in Table XXI. As in the previous study of 1941-1942,[3] consultation was considered adequate when the patient was examined by the consultant and there was fulfillment of the minimum standards as adopted by the Committee. Telephone and "curbstone" consultations were considered inadequate. Twenty-nine or 42.6 per cent of the patients had no consultation whereas the Committee judged that in seventeen (25 per cent) of these, consultation was

TABLE XXI. ADEQUACY OF CONSULTATION

		No.	Per Cent	Per Cent Excluding Those Not Obtained
None				
Indicated		17	25.0	
Not indicated		12	17.6	
Adequate throughout		22	32.4	56.4
Board obstetrician	3			
Board obstet. and other spec.	7			
Other spec.	7			
Other self-styled spec.	2			
Physician in general practice	3			
Inadequate		17	25.0	43.6
Board obstetrician	1			
Board qualified obstetrician	1			
Board obstet. and other spec.	2			
Other spec.	3			
Self-styled obstet. and other spec.	1			
Other self-styled spec.	1			
Physician in general practice	8			
Totals		68	100.0	100.0

definitely indicated. The lack of consultation when indicated in 25 per cent and inadequate consultation in another 25 per cent shows that one-half of the total number of patients were not given the benefit of an established procedure during their fatal illness. There is no question but that many of these women could have been salvaged had adequate consultation been obtained.

The primary causes of death are listed in Table XXII. In some instances several factors may have contributed to the patient's death but only the primary cause is listed. The causes of death as shown in the table were determined by the committee after careful evaluation of each case and are independent of the causes listed on the death certificates.

In a general summary of this sort it is impossible to enumerate the details of these categories. Subsequent publications will be forthcoming but certain comments are in order at this time. Toxemia of pregnancy was the leading cause of death and briefly the most glaring errors with regard to management of this condition were inadequate prenatal care, failure to act in the presence of symptoms, especially epigastric pain, inadequate patient study, inadequate sedation, use of intravenous saline, use of pituitrin, administration of open drop ether for convulsions in the presence of pulmonary edema, excessive intravenous therapy and delay or absence of consultation. It is interesting to note that

TABLE XXII. PRIMARY CAUSE OF DEATH

			No.	Per Cent
Toxemia			13	19.1
Eclampsia		5		
Arteriolosclerotic		6		
Anuria and uremia	2			
Shock of unexplained origin	2			
Cerebral hemorrhage	1			
Liver necrosis, rupt. and hemorr.	1			
Sev. pre-eclampsia (pulm. edema and shock)		1		
Unclassified toxemia (liver necrosis)		1		
Obstetric hemorrhage			9	13.2
Rupture of uterus		5		
Spont. (prev. C.S.)	1			
Spont. during labor	1			
Traumatic rupt. and complete abruptio (auto accident)	1			
Injudicious use of pitocin in labor	1			
Pituitrin, 1 cc. for ind. of labor	1			
Postpartum hemorrhage		4		
Retained placenta and atony	1			
Atony and/or ? uterine rupture	1			
Atony and ? hemorrhage dyscrasia	1			
Atony	1			
Infection			7	10.3
Septic abortion	2			
Peritonitis and prob. pulm. emb. after rad. C.S.	1			
Peritonitis and abd. evisc. after class. C.S.	1			
Peritonitis from perforated appendix	1			
Pulm. emb. from prob. axillary thrombophlebitis and ? pelvic thrombophlebitis	1			
Pulm. emb. from superficial thrombophleb.	1			
Heart disease			4	5.9
R.H.D. with acute left vent. failure		2		
Cong. H.D. with cardiac failure		1		
Hyp. H.D. with acute left vent. failure		1		
Anesthesia			4	5.9
Spinal—shock and resp. paralysis		2		
Inhalation—vomiting and asp.		1		
Inhalation—laryngospasm, vomit. and asp.		1		
Other obstetrical complications			9	13.2
Amniotic fluid embolism		2		
Unexp. shock after low forceps delivery		1		
Pituitrin shock		1		
Chorionepithelioma		1		
Air embolism (attempted self induced ab.)		1		
Left vent. failure from overtreatment of sev. anemia of pregnancy		1		
Not determinable				
? Amniotic fluid embolism		1		
? Criminal abortion ? rupt. of uterus		1		
Non-obstetrical complications			16	23.5
Brain tumor		3		
Brain pathology—? tumor, ? hemorr.		2		
Acute bulbar poliomyelitis		2		
Cerebral hemorr. (rupt. of aneurysm)		1		
Carcinomatosis (primary stomach)		1		
Shock due to spont. hemothorax (cause unkn.)		1		
Coronary thrombosis		1		
Chronic glomerulonephritis with uremia		1		
Acute atrophy of liver (infect. hepatitis), p.p.		1		
Stem cell leukemia		1		
Irreversible insulin coma (shock therapy for manic dep. psychosis)		1 1		
Not determinable (sudden death postpartum—autopsy neg.)		1		
Traumatic			6	8.8
Suicide		3		
Homicide		1		
Automobile accident				
Crushed chest, internal injuries (p.p.)		1		
Cardio-pulm. insuff. following thorocentesis		1		
Totals			68	99.9

in this group there were two deaths from severe liver necrosis wih massive hemorrhage. Eastman[2] states that this is a rare complication and he quotes Sanes and Kaminski who reported a case of their own and abstracted five additional cases from the literature. All of these occurred in eclamptics whereas the two in this series occurred in an arteriosclerotic and in an unclassified toxemia.

Obstetric hemorrhage was the second leading cause of death. In five out of these nine

TABLE XXIII. PRIMARY CAUSE OF DEATH

Cause of Death	No.	Per Cent	Per Cent Excluding Non-Obstetrical Complications
Non-obstetrical complications	22	32.4	
Toxemia	13	19.1	28.3
Obstetric hemorrhage	9	13.2	19.6
Infection	7	10.3	15.2
Heart disease	4	5.9	8.7
Anesthesia	4	5.9	8.7
Other obstetrical complications	9	13.2	19.6
Totals	68	100.0	100.1

deaths the Committee assessed direct responsibility for the death to the physician involved. It is surprising that hemorrhage took such a heavy toll in spite of present-day improved obstetric technique and the availability of blood for transfusion. In all but one of the nine instances, Red Cross blood banks were available yet the patients received an inadequate amount of blood, none at all or it was administered too late. The false idea seems to be prevalent that one pint of blood is adequate blood replacement therapy. No consideration was given to the administration of type O, rh negative blood in an emergency or forcing blood in under pressure. One patient with history and findings which were typical of rupture of the uterus was allowed to remain in shock for seven and one-half hours until her death. Two hours prior to death, 1,000 cc. of 5 per cent glucose in normal saline was started subcutaneously and thirty minutes before death, 500 cc. of plasma was started. Injudicious use of pituitrin and pitocin were responsible for the death of two of these hemorrhage deaths. The first was a grand multipara who was proceeding normally in labor until the physician administered pitocin, 4 m. (h) near the completion of the first stage. The result was laceration of the cervix, hemorrhage and death. The second patient received a single dose of 1 cc. of pituitrin (h) for induction of labor (administered by a nurses' aid) whereas the physician had ordered 4 m. every one-half hour for five doses.

It is surprising that infection was the third leading cause of death in spite of the availbility of sulfonamides and the numerous antibiotics. The four anesthesia deaths have been discussed in detail elsewhere. Combining the 1941-1942 study[3] and the present one, it is seen that there were a total of seven anesthetic deaths and nine eclamptic deaths. Thus anesthesia as a cause of death in the state is very nearly as important as eclampsia. The significance of this is obvious. It is gratifying to report that there was no single death attributable to ectopic gestation during the current year of study.

TABLE XXIV. PREVENTABILITY OF AND RESPONSIBILITY FOR DEATH

		No.	Per Cent	
Preventable		22	32.4	
Physician responsibility	19			
Physician and disease resp.	1			
Physician and hospital adm. resp.	1			
Patient and disease resp.	1			
Not determinable		1	1.5	
Not preventable		40	58.8	66.1
Disease responsibility	37			
Disease and patient resp.	3			
Probably preventable		3	4.4	
Physician responsibility	1			
Phys., pt. and disease resp.	1			
Patient and disease resp.	1			
Possibly preventable		2	2.9	
Physician and disease resp.	2			
Totals		68	100.0	

Table XXIII represents a more concise summary of the cause of death. One-third of all the deaths were due to non-obstetrical complications. Comparing this with the previous study of 1941-1942,[3] a definite trend of improvement is noted in the obstetric care. In the previous study only 17 per cent of the deaths were due to non-obstetrical complications. If the so-called non-obstetrical deaths are excluded, the present study shows a corrected maternal mortality rate of 0.6 per 1,000 live births (forty-six deaths among 76,074 live births).

Preventability of death with establishment of responsibility for death is presented in Table XXIV. Twenty-two or 32.4 per cent of the deaths were assessed as preventable by the Committee and physicians were entirely responsible in nineteen and partially in two. When the Committee assessed deaths as possibly or probably preventable, these were considered as not preventable in the final tabulation. In a report concerning maternal mortality in the United States in 1949, Dickinson and Welker[4] state that "the rate of 1 per 1.000 live births is apparently an irreducible minimum" and that "the maternal mortality problem in the United States is no longer a serious national problem but is, rather, one for local action in those areas in which maternal mortality rates are still relatively high." The Committee wishes to take issue with these statements. In the state of Minnesota where the uncorrected maternal mortality rate for the pres-

TABLE XXV.
ADEQUACY OF POSTMORTEM EXAMINATIONS

	No.	Per Cent	
Obtained and adequate	24	35.3	38.2
Obtained and inadequate	2	2.9	
None, not requested by physician	29	42.6	61.7
None, requested by phys. and refused	11	16.2	
None, requested by nurse and refused	2	2.9	
Totals	68	99.9	

TABLE XXVI. ANALYSIS OF MATERNAL DEATH CERTIFICATES ACCORDING TO ACCURACY AND COMPLETENESS

	No.	Per Cent
Complete and correct	15	22.1
Complete but incorrect	7	10.3
Incomplete and incorrect	21	30.9
Incomplete, incorrect and false	6	8.8
Incomplete, otherwise correct	19	27.9
Totals	68	100.0

ent year of study is 0.89 per 1,000 live births (below the corrected national figure of 1 per 1000), there is still ample room for improvement since one-third of these deaths were definitely preventable. Marked improvement of care in the state has occurred as noted by again comparing the present study with the one done in 1941-1942.[3] In 1941-1942, 73 per cent of the deaths were considered preventable whereas this decreased to 32 per cent in the present study.

Adequacy of postmortem examinations is recorded in Table XXV. Thirty-five per cent of the patients had autopsies which were considered adequate in arriving at an accurate diagnosis. This is an improvement as regards previous study of 1941-1942[3] when only 8 per cent were considered adequate. There is much room for improvement as evidenced by the fact that in 42.6 per cent of these deaths, no attempt was made to obtain an autopsy. This indicates an unhealthy lethargy on the part of the physicians since the value of an autopsy is certainly clear. Since many of the physicians gave the reason that no pathologist was available, the Committee has arranged for the service of a University of Minnesota pathologist for subsequent deaths. He can be obtained by contacting the State Department of Health.

Analysis of maternal death certificates according to accuracy and completeness is shown in Table XXVI. Only 22 per cent of these were complete and correct. In six instances (8.8 per cent), there was actual falsification of the certificate. One physician was involved in two instances. His first patient died suddenly during labor with cause of death unknown (clinical history and findings suggested possible amniotic fluid embolism but no autopsy was obtained), yet the physician listed cause of death as unqualified coronary occlusion due to rheumatic heart disease. His reason was "so he wouldn't be bothered by the State Health Department." His other death was an unmistakable anesthetic death (spinal anesthesia), yet he listed this as "surgical shock." The third death was also a spinal anesthetic death but the physician listed the cause of death as "pregnancy." The fourth death was also an anesthetic death (inhalation anesthesia with vomiting and aspiration) and the physician listed this but did not mention the pregnancy state. The fifth patient died as a result of generalized peritonitis from a perforated appendix yet the perforated appendix was not mentioned even though this was found at autopsy. With regard to the sixth death, the death certificate was falsified for fear of legal implications. Considering the one item on the death certificate of cause of death, 33.8 per cent of these were comletely incorrect when compared with the actual cause of death as determined by the Committee. This immediately raises the question of the accuracy of the data supplied by the Bureau of Vital Statistics of the State Department of Health when material presented to them on the death certificates is so incorrect.

In the same vein, analysis of birth and stillbirth certificates according to accuracy and completeness is given in Table XXVII. Only 31 per cent of these were complete and correct.

Outcome of child and duration of pregnancy is tabulated in Table XXVIII. It is seen that only 46.4 per cent of the deliveries associated with these maternal deaths terminated with living children who survived, 26.1 per cent terminated with stillbirths or neonatal deaths, 7.2 per cent terminated as abortions and 20.3 per cent died undelivered. A total of seventeen patients died undelivered but three of these were subjected to postmortem cesarean sections without success. Of the remaining fourteen, nine or 13.2 per cent had viable pregnancies. The above figures coincide with those of the previous study in 1941-1942,[3] and again show the strong association be-

TABLE XXVII. ANALYSIS OF BIRTH AND STILLBIRTH CERTIFICATES ACCORDING TO ACCURACY AND COMPLETENESS

		No.	Per Cent
Complete and correct		21	30.9
Complete but incorrect		11	16.2
Incomplete and incorrect		12	17.6
Incomplete, otherwise correct		4	5.9
Not reported, required		1	1.5
Not reported, not required		19	27.9
Early abortion	5		
Died undelivered	14*		
Totals		68	100.0

*Does not include the three patients who were delivered by postmortem cesarean section.

TABLE XXVIII. OUTCOME OF CHILD AND DURATION OF PREGNANCY

Outcome of Child		Duration of Pregnancy		No.	Per Cent
Born alive and survived				32	46.4
		Premature	1		
		Term	29		
		Postmature	2		
Born alive and died neonatally				2	2.9
		Late abortion (28 wks.)	1		
		Term	1		
Stillborn				16	23.2
Macerated	4				
		Abortion (24 wks.)	1		
		Premature	2		
		Term	1		
Non-macerated	12				
		Abortion (24 wks.)	2		
		Premature	4*		
		Term	6**		
Other abortions (12-19 wks.)				5	7.2
Undelivered				14	20.3
Totals				***69	100.0

*Includes one postmortem cesarean section.
**Includes two postmortem cesarean sections.
***68 patients—1 set of twins.

tween death of the mother and loss of the offspring.

Summary

As previously mentioned elsewhere in this summary, five patients died without having been hospitalized at any time during their illness. Considering only bare essentials of a medical hospital record as acceptable, twenty-five of the sixty-three (40 per cent) were grossly inadequate. In eight instances only nurses' notes were available. In one instance there was no medical record available even though patient expired soon after admission to the hospital. In many instances, physician prenatal records were also grossly incomplete and in several instances, no prenatal records were available.

1. A continuous yearly maternal mortality study is being carried out in the State of Minnesota by the Maternal Mortality Committee of the State Medical Association. A general summary of the study, from April 1, 1950, through March 31, 1951, has been presented.

2. Due to the failure of physicians to mention pregnancy or the postpartum state on the death certificate, the yearly Minnesota maternal mortality rate is being underestimated by 31 per cent or approximately 0.18 points.

3. Analysis of the maternal mortality according to the age of the mother showed a progressive increase in rate with each older age bracket. The mortality rate of patients forty to forty-four is ten times that of patients fifteen to nineteen years of age.

4. There were sixty-eight maternal deaths among 76,074 live births for an uncorrected maternal mortality rate of 0.894.

5. Analysis of the maternal mortality according to order of birth showed a progressive rise in rate with increasing parity after the third delivery.

6. Even though the obtaining of a blood serological test for syphilis has long been considered a standard procedure essential for adequate prenatal care, 46 per cent of these mothers had no serology taken even though they were registered. By registered is meant that the patient engaged the services of a physician for prenatal care.

7. Even though the importance of an Rh determination in the obstetric patient has also been well established, 50 per cent of the registered patients had no Rh determination done at all or it was done after delivery.

8. Of the sixty-two patients who were registered, forty or sixty-five per cent had no pelvic mensuration whatsoever or less than the minimum requirements as adopted by the Committee. Two deaths can be attributed to the fact that their pelves were incompletely measured.

9. Considering the minimum requirements for adequate obstetrical care as adopted by the Maternal Mortality Committee, prenatal care was faulty in 69 per cent, care during labor and/or for delivery was faulty in 56 per cent and postpartum care was faulty in 63 per cent. The faulty care contributed directly to the patient's death in 21 per cent as regards prenatal care, 44 per cent as regards labor and delivery and 56 per cent as regards postpartum care.

10. Sixty-three patients (93 per cent) were

hospitalized for delivery or for illness if they died undelivered.

11. Sixty-six patients (97 per cent) had physician care.

12. Malpresentation was no factor in the production of these deaths.

13. Radicalism was a prominent factor in the production of these deaths as evidenced by the fact that 54 per cent of the deliveries were by operative means. Of the total number of operative deliveries (twenty-eight), the Committee judged only sixteen (57 per cent) to be indicated and one-third of the procedures contributed directly to death of the patients.

14. The cesarean sections comprised almost one-third of all the operative deliveries. All of the nine cesarean sections performed were elective and the Committee judged six of these as being indicated.

15. Considering the total number of operative procedures performed (sixty-one), both obstetrical and non-obstetrical, 46 per cent were indicated and 28 per cent contributed to the death of the patients.

16. Of the sixty-eight maternal deaths, forty-two had some form of anesthesia for delivery. Of the forty-two anesthetics, 60 per cent were of the inhalation type. Four deaths were directly attributable to anesthesia. Two deaths were due to vomiting and aspiration and two were due to incompetently applied spinal anesthesia. Only 7 per cent of the anesthetics were administered by physician-anesthetists.

17. Twenty-nine or 43 per cent of the patients had no consultation whereas the Committee judged that in seventeen (25 per cent), consultation was definitely indicated. Another 25 per cent had consultation which was inadequate.

18. The primary cause of death is tabulated. Toxemia was the leading cause, obstetric hemorrhage second and infection third.

19. One-third of deaths were due to non-obstetrical complications. On excluding the "non-obstetrical deaths," a corrected maternal mortality rate of 0.6 per 1,000 live births is obtained.

20. Twenty-two or 32 per cent of the deaths were assessed by the Committee as preventable. The physician was entirely responsible in nineteen and partially in two.

21. Thirty-five per cent of the patients had autopsies which were considered adequate.

22. Only 22 per cent of the death certificates were complete and correct. In six instances there was actual falsification of the death certificate. Considering the one item on the death certificate of cause of death alone, 34 per cent of these were completely incorrect when compared with the actual cause of death as determined by the Committee.

23. Only 46 per cent of the deliveries associated with these maternal deaths terminated with living children.

24. Considering only the bare essentials of a medical hospital record as acceptable, 40 per cent were grossly inadequate and often enough there was no record at all. This almost always means that essential laboratory and clinical data were not obtained. Diagnostic failure was often dependent on this. Hospitals must see to it that this situation is changed since the safety of patients is directly involved.

25. All hospitals are now required to notify the State Department of Health within three days of the time of a maternal death.

References

1. Dickinson, Frank G., and Welker, Everett L.: Maternal mortality in the United States in 1949. J.A.M.A., 144:1395-1400, 1950.
2. Eastman, Nicholson J.: Williams Textbook of Obstetrics. Tenth Edition. New York: Appleton-Century-Crafts, 1950.
3. Maternal Mortality Committees, Minnesota State Medical Association: Minnesota maternal mortality study, July 1, 1941, through June 30, 1942. Minn. Med., 27:475-481 and 557-562, 1944.
4. Minnesota Department of Health: Maternal, Infant and Childhood Mortality (Pamphlet) 1950.
5. Yerushalmy, J., Palmer, C. E., and Kramer, M.: Studies in childbirth mortality. II. Age and parity as factors in puerperal fatality. Reprint No. 2175, Pub. Health Rep. 55:1195-1220, 1940.

LESIONS OF THE CHEST

The existence of isolated well-circumscribed intrathoracic nodules on routine x-ray examination of the chest may indicate the presence of significant disease. In particular, the possibility that the lesions represent an early phase in the development of bronchogenic carcinoma is to be considered. The asymptomatic character of the nodule, the absence of physical signs and the apparent state of good health of the patient must not lead the physician to the false conclusion that the abnormality cannot be signficant and that it therefore does not require treatment.—Sidney E. Wolpaw, M.D., *Annals of Internal Medicine*, Sept., 1952.

Laboratory Aids to Medical Practice

Sponsored by
The Minnesota Society of Clinical Pathologists

TESTS FOR CANCER

Clinicians, surgeons and pathologists alike anticipate the time when a reliable and inexpensive test will be readily available for the detection of cancer. Such a time has not arrived yet, despite the fact that literally hundreds of techniques for this purpose have been published. Nevertheless, so many of these proposed tests have achieved such wide publicity, or even notoriety, that the pathologist frequently is questioned as to why he does not perform such tests. Therefore, this report will attempt a brief summary of the present status of such tests.

Recent improvements in therapy make imperative the development of a technique to allow early diagnosis of malignant disease. Why has no investigator come up with a reliable immunologic test for cancer similar to the tests that have been available for years in diseases such as syphilis, typhoid fever and brucellosis? The basic problems in cancer are quite different from those in an infectious condition. The etiologic factor concerned in cancer is unknown; indeed, a number of different causative agents may be present, which circumstance may render attainment of a single, successful test rather remote in light of current knowledge. Homburger[1] discussed the evaluation of diagnostic tests for cancer; his report summarized a number of past and present techniques, most of which have been discarded. He listed 238 references, yet it is certain that many more tests than this have been fostered at some time or other. In general, he divided the basic categories of tests into morphologic techniques, tests based on urinary constituents, chemical changes in the blood, chemical changes in the body secretions, immunologic changes and enzymologic procedures.

What are some of the requirements of a good test for cancer? The test must detect malignant disease in an early stage. The technique must be simple and readily reproducible. The procedure must be of great specificity so that positive results will be found only in malignant disease. It is obvious that any test giving an appreciable incidence of false positive results will entail great expense for subsequent diagnostic work and will impose extreme mental anguish on healthy persons victimized by such faulty results. False negative reactions should not occur; the dangers of such negative reactions in the presence of a malignant tumor are obvious. Positive and negative reactions should be sharply demarcated, with a minimal zone of doubtful reactions.

Acquisition of such a test might appear to be related to utopianism but actually many immunologic and chemical procedures performed daily in medical laboratories approach this degree of accuracy, specificity and reliability. Certainly, no test for detection of cancer available at present can remotely qualify for these requirements.

Tests proposed for the diagnosis of cancer range in complexity from observation of the patterns in a drying drop of blood to extremely complicated chemical and enzymatic assays. The basic fault in many of these tests is that the characteristic claimed to be diagnostic for malignancy is one that is extremely unstable or variable, making reproducible interpretations of changes in such a characteristic well-nigh impossible. Many of us remember the test proposed several years ago by a young pathologist in the Upper Midwest; the technique depended on a relatively simple change in the urine. This pathologist and his test became famous when results of his test performed on his own urine suddenly changed from negative to positive; he was then found to have a malignant brain tumor, which caused his death shortly after its discovery. What has happened to this test? It has suffered the same retreat into obscurity that has occurred to so many similar tests based on superficial study of a handful of cases and so often colored by the bias of the original promulgator.

Another test was based on decolorization of methylene blue by plasma. It was stated by Black that plasma obtained from patients who had cancer displayed decreased powers of reduction and that such plasmas could be differentiated accurately by their action on dyes. The original report of this test showed considerable lack of information concerning the malignant disease itself and even greater lack of data about other possible complicating factors. Great controversy arose concerning this test for several years until a number of reports had accumulated to demonstrate its complete invalidity as a procedure for the detection of cancer.

A large number of tests dealing with chemical changes in the blood have been proposed. Many of these tests give an amazingly high incidence of positive reactions in patients who have cancer; however, an even more amazingly high incidence of positive reactions occurs in control patients. One test gave correctly positive results in 52 to 91 per cent of cases, but correctly negative results in as few as 20 per cent of cases. Positive reactions to another procedure were 85 per cent correct but the test gave as much as 76 per cent false negative results. Still another test gave 72 to 96 per cent positive reactions in a series of patients who had cancer but at the same time gave from 5 to 54 per cent positive results in patients who did not have malignant disease.

The iodoacetate index has been studied by a number of workers after being tried by Huggins and his group in an effort to "screen" patients who had cancer. Huggins and his co-workers were conservative about the specificity of this procedure. Homburger stated that the original technique was not reproducible and possessed an uncertain end point. A recent modification was more reproducible but also more insensitive; a survey showed that it produced 21 per cent false negative and 23 per cent false positive reactions. It was evident that these rates would be even greater in early stages of malignant disease. Homburger concluded that in its present form the procedure was useless and confusing as a diagnostic test for cancer. Nevertheless, advertisements appeared from commercial laboratories offering a kit for the practical performance of the Huggins' test for cancer in the physician's office. Such a situation obviously is deplorable.

It is apparent, therefore, and regrettably so, that no reliable test for the detection of cancer is available at present. This means that the early diagnosis of cancer still depends on education of the general population and constant awareness by the physician of the possibility of malignant disease. Use of biopsy and of smears for malignant cells is the only dependable means at hand for identification of cancer.

Reference

1. Homburger, F.: Evaluation of diagnostic tests for cancer. I. Methodology of evaluation and review of suggested diagnostic procedures. Cancer, 3:143-172 (Jan.) 1950.

* * *

This is the sixth in a series of editorial reports sponsored by the Minnesota Society of Clinical Pathologists and designed to foster closer relationships among practicing physicians and pathologists. The previous reports have emphasized what the pathologist can do to aid his colleagues. This report discusses a hiatus in laboratory procedures and points out what the laboratory physician cannot do. It is anticipated that a reliable test for the detection of cancer will be developed at some future time; when it is, the procedure will be embraced eagerly by all physicians.

G. G. Stilwell, M.D.
Chairman, Editorial Committee

Mayo Clinic,
Rochester, Minnesota

REVISION OF N. N. R. STATEMENT ON TESTES

In the customary annual reconsideration of the text of New and Nonofficial Remedies it was pointed out to the Council that exaggerated and unwarranted claims are made for the use of these agents in the so-called male climacteric. In order to promote rational use and to establish reasonable limits to such claims the Council adopted the following paragraph to be inserted in the general statement on testes (N. N. R. 1952, p. 367):

"A spontaneous cessation of hormone release by the testis with aging has been recognized as a rare entity termed male climacteric or menopause. Symptoms are similar to those of the female menopause. In the vast majority of instances, the vague manifestations of a psychoneurosis are incorrectly confused with those of organic testicular disorder. Criteria for laboratory confirmation of the diagnosis of male climacteric are equally confused. At present, such diagnosis probably is not justified without the demonstration of castration levels of urinary gonadotropin, as in the female. Testosterone provides effective replacement therapy only in the true disorder."

The Council has hitherto accepted only preparations of testosterone propionate and methyl testosterone. As corollary to the preceding decision the Council voted also to consider preparations of free testosterone.

Case Report

DISSECTING ANEURYSM OF THE AORTA WITH NEUROLOGICAL COMPLICATIONS

EDWIN G. BENJAMIN, M.D., ALBERT J. GREENBERG, M.D.,
and ANDREW J. LEEMHUIS, M.D.
Minneapolis, Minnesota

Dissecting aneurysm of the aorta is a relatively uncommon condition. It may, however, present a wide variety of symptoms and clinical findings. It may be confused with many intrathoracic conditions especially coronary thrombosis. The abdominal findings may suggest any of several acute surgical conditions, diagnosis of which could result in unwarranted operations. A correct diagnosis is essential if an accurate prognosis is to be given. Almost all of the conditions with which it may be confused are less rapidly fatal.

Case Report

A white man, aged fifty, was admitted to Northwestern Hospital, Minneapolis, at 10:00 a.m. on June 10, 1952. His complaints on admission were as follows: (1) acute left anterior chest pain, radiating from the sternum through to the back, at the cardiac level; (2) paralysis of the lower extremities; (3) numbness in the lower abdomen and legs. These symptoms were associated with profuse perspiration and a cold and clammy skin.

History of Present Illness.—The patient stated that he went to his work in a restaurant in Minneapolis at the usual time on the day of his admission. He felt well until approximately 9:30 a.m. Then, while going upstairs, he was suddenly seized with an excruciating pain in the left chest and the left part of his back. The pain was so severe as to cause prostration. He took a dose of baking soda in water without any relief. He arrived at the Northwestern Hospital by ambulance shortly following the onset of the pain. He stated that he had had some pain in the right flank during the past year that came in spells, although it was never as severe as the present attack; it was enough, however, to cause him to consult another physician. He said that the doctor took x-rays of the kidney region, but that no definite diagnosis was made. He had an exacerbation of this pain in the side the night before the present attack and, on instructions from his doctor, took a hot sitz bath which gave him considerable relief.

Past History.—The past history was essentially of no importance. He had had no serious illnesses and no operations. Close questioning revealed that about thirty years previously he had had a course of treatment with arsenicals, most likely for a luetic infection. He had had no treatment for this condition recently.

Physical Examination.—The patient was a well-developed, well-nourished, white man, about fifty years of age. He was approximately 6 feet tall and weighed about 200 pounds. At the time of the examination, he was obviously in great distress. The skin was cold and clammy, and he was perspiring profusely. He was moderately cyanotic. His blood pressure on admission was reported as 180/60; temperature, 97 degrees; pulse, 98; respirations, 26.

The positive findings on physical examination were as follows. There was a systolic murmur to the left of the sternum, grade II, soft, and somewhat coarse. The heart did not appear enlarged, and the liver was not palpable. There was some tenderness on deep pressure in the abdomen but no masses could be felt. There was a difference of the blood pressure in the arms: the left 86/70; the right, 200/100. The pulse in the left wrist was barely palpable, the right easily palpable. The femoral pulse of the right could not be detected; the left was barely palpable. There was no pulse in the popliteal artery on either side. The legs were cyanotic, and the muscles were very hard. Both lower extremities were cold and clammy and numb. Both extremities in the lower portion seemed to be slightly swollen. Neither lower extremity could be moved voluntarily.

Neurologic Examination.—The twelve pairs of cranial nerves, including a funduscopic examination, did not reveal any evidence of abnormality. Both of his arms were strong and did not show any muscular weakness, despite the difference between the blood pressure in right and left arms. The reflexes were present and equal, and sensation in all modalities was normal. The abdominal reflexes were absent bilaterally.

The right leg was flaccid and did not show any femoral pulse. It was mottled in appearance and both the patellar and Achilles reflexes were absent. All of the toe signs were negative. The left leg was very rigid but there was a very feeble femoral pulse. The rigidity was so great that the reflexes could not be elicited. The toe signs in the left leg were negative.

There was complete anesthesia to cotton, pin-prick, pain, vibratory sense and position sense in both lower extremities and this level of anesthesia extended up to the umbilicus. From the umbilicus to approximately the rib margin, there was a partial anesthesia. The patient had an atonic bladder and was unable to void.

Laboratory Data.—On admission, the urine was normal, except for a faint trace of albumin, an occasional white cell and a few hyaline casts. The blood showed: hemoglobin, 14.2 grams; leukocytes, 11,600; neutrophiles, 86 per cent; lymphocytes, 14 per cent; sedimentation rate, 25 millimeters in one hour. The serum amylase was 57 milligrams per cent.

Subsequent laboratory examinations on June 11 showed no significant changes. The blood urea nitrogen was 22.

Urinalysis, June 11, showed hemoglobin and red blood cells in the urine, 400 cells per high-powered field. Guiac tests run on this urine were 4 plus. The blood Wasserman was negative.

An electrocardiogram was taken on admission and reported as follows:

"Slight STV-1, 2, 3, 4 elevation. High, peaked TV-3, 4. Negative TV-1. This is within normal limits. The changes in the V-1 occasionally seen as only findings in infarction. If clinically indicated, suggest serial tracings."

Another electrocardiogram was taken on the following day and was reported as follows:

"Changes since 6/10/52 are increased rate and height

Presented at the Annual Meeting of the Southern Minnesota Medical Association, Austin, September 8, 1952.

or depth of all T-waves. The tracing is normal except for tachycardia."

X-Ray Reports.—Radiograph of the abdomen, taken June 10, failed to show abnormality in the kidney or bladder regions, but evidence of excessive gas in the stomach and intestines was present.

Radiograph of the chest, taken June 10, showed some ectasia of the aorta and a heart shadow suggesting a left ventricular type.

Course in Hospital.—The condition of the patient went rapidly downhill. His pain was controlled with 15 milligram doses of morphine and 100 milligram doses of demerol. His pulse became weak and feeble; respirations rapid and shallow. He expired approximately 9:30 p.m. on June 11, 1952, about thirty-six hours after admission.

Autopsy Findings.—Gross examination of the aorta revealed a large mass within the wall of the vessel, 3 centimeters in diameter, in the area of the left subclavian branch, and another in the lower third of the aorta. Incisions of these masses showed them to be filled with clotted blood. The root of the aorta was thin-walled and showed, 1.5 centimeters above the aortic valve, a transverse rent in the intima which measured 4 centimeters in length. This communicated with a dissecting aneurysm which extended the entire length of the aorta and ended abruptly with the bifurcation of the common iliac artery. It was possible to push a blunt probe through this rent in the root of the aorta into the region of the left subclavian mass. There was a communication in the form of a longitudinal dissection running from 1.5 centimeters distal to the aortic valve down through the two aforementioned masses to the iliac arteries and forming a cuff around them. Microscopic studies revealed medial necrosis of the aorta. The remainder of the autopsy was noncontributory.

Differential Diagnosis

The differential diagnosis included hematomyelia, thrombosis of the anterior vertebral artery, infectious myelitis, and dissecting aneurysm. The patient had no history of an acute infection, being in relatively good health, and the onset of his difficulty was quite sudden. The blood pressure difference between the right and left arms made us feel that the most likely diagnosis was one of secondary damage due to vascular changes in the spinal cord from a dissecting aneurysm rather than any primary pathology in the vascular supply to the spinal cord itself.

The combination of neurological and vascular abnormalities narrowed the diagnostic possibilities. Myocardial infarction seemed unlikely in view of the normal electrocardiogram and the acute onset of the neurological abnormalities. A pre-existing luetic aneurysm was considered as a basis for the vascular abnormalities, but the chest x-ray did not reveal any evidence of any aneurysm of the thoracic aorta.

For these reasons, the diagnosis of dissecting aneurysm of the aorta was made. The pain arising in the chest, subsequently in the back, and the development of the paralysis of the lower extremities seemed to make this diagnosis more tenable than any other. The age and the patient's antecedent hypertension also were compatible with this diagnosis.

The upper half of the spinal cord is supplied by the anterior and posterior spinal arteries which arise from the vertebral artery and anastomose up and down the cord. It also has a good blood supply from above the level of the fifth cervical vertebra down from the lateral spinal arteries which arise from the subclavian artery. The middle section of the cord has a rather poor blood supply, and the middle section as well as the lower half receives its blood supply from the intercostal, the lumbar arteries, and the internal iliacs, all of which arise from the thoracic and abdominal aorta.

If the loss in strength, disturbed sensation and the lost reflexes in the lower extremities were due to an ischemic damage or necrosis of the peripheral nerves in the legs secondary to occlusion of the femoral arteries, there would of course not be any changes in the abdomen, and the bladder should be functioning properly. Because of the loss of abdominal reflexes, the loss of sensation extending completely to the umbilicus and partially to the rib margins, and the loss of bladder function, it was felt that the damage was probably due to the dissection of an aneurysm separating the layers of the aorta and disturbing the blood supply throughout the spinal cord from approximately the eighth thoracic vertebra down.

Discussion

Shennan's review, in 1934, stimulated the modern interest in dissecting aneurysm of the aorta. He studied the world's literature at that time. Of 300 cases reported, only six had been diagnosed ante mortem. In 1937, White described the experience at the Massachusetts General Hospital and commented upon the rarity of the diagnosis and further stated that an increased awareness of this condition would undoubtedly lead to additional cases being diagnosed ante mortem. In 1947, White again reviewed the case experience at the Massachusetts General Hospital and found that the diagnosis had been made much more frequently during this ten-year period than it had been at the time of his earlier report. He ascribed this to an increased suspicion of this condition prior to the death of the patient. Weisman and Adams in 1944 reviewed the neurological complications attending a dissecting aneurysm as observed at the Massachusetts General Hospital. It is interesting to note that prior to 1944 in only two cases had the pathology of the spinal cord been studied. They described the various neurological manifestations of this condition. Scott, in 1948, found that of 424 cases of dissecting aneurysm which had appeared in the world literature and were suitable for analysis, 21 per cent had neurological abnormalities.

As early as 1937, White commented upon the fact that a surgical approach could be feasible under certain conditions. More recently, because of the advances in vascular surgery, it has been thought that in some cases in which the outcome might be otherwise fatal a surgical approach might be successful. If this should prove feasible the importance of diagnosis would be accentuated.

Medical therapy has little to offer a patient of this kind; however, an occasional patient does survive the acute attack. It is estimated that the duration of life following the acute episode is about five days and the mortality is in the neighborhood of about 90 per cent.

References

1. David, P., McPeak, E. M., Vivas-Salas, E., and White, P. D.: Dissecting aneurysm of aorta. Ann. Int. Med., 27:405-419 (Sept.) 1947.
2. Glendy, R. E., Castleman, B., and White, P. D.: Dissecting aneurysm of the aorta. Am. Heart J., 13:129-162 (Feb.) 1937.
3. Shennan, T.: Dissecting Aneurysms. Medical Research Council, Special Report Series, No. 193, His Majesty's Stationery Office, 1934.
4. Scott, R. W., and Sancetta, S. M.: Dissecting aneurysm of aorta with hemorrhagic infarction of the spinal cord and complete paraplegia. Am. Heart J., 38:747-756 (Nov.) 1949.
5. Weisman, A. D., and Adams, R. D.: The neurological complications of dissecting aortic aneurysm. Brain, 67:69-92 (June) 1944.

History of Medicine In Minnesota

MEDICAL HISTORY OF THE COUNTY OF YELLOW MEDICINE

MILDRED B. LEE
Granite Falls, Minnesota

The County of Yellow Medicine lies in the central southwestern part of the State of Minnesota. It is a long, narrow county, shaped somewhat like a hammer, with the head embedded in Redwood County and the handle extending westward to the South Dakota line. Upon its northern boundary lie the Counties of Lac qui Parle and Chippewa; on the south are Redwood, Lyon, and Lincoln Counties, and its eastern boundary is the Minnesota River.

From east to west the county measures at its greatest length fifty-four miles, and at its greatest width twenty-one miles. Within its confines lies an area of land and water, rolling prairie and wooded valleys, totalling 763.12 square miles.

The waters which drain from this area in creeks and rivers flow in a northerly or northeasterly direction to discharge into the Minnesota River. In the western townships the Lac qui Parle River, as sparsely wooded as the lake for which it is named, winds almost directly northward. Florida and Canby creeks empty into it. The Yellow Medicine River rises in the southwestern highlands to flow in a generally northeasterly direction almost the entire length of the county, gathering in its course Spring Creek and other streams which run bank-full in spring, and dwindle through the hot, dry summer months. Beginning as a prairie river, treeless and smiling, the Yellow Medicine follows a valley which gradually widens and deepens and becomes quite heavily timbered for the last fifteen miles of its journey toward the Sky-Blue-Water.

In the northeastern corner of the county a small stream appropriately called Stony Run loops in and out at the foot of the bluffs which edge the Minnesota Valley. Below this creek a small stream heads in the Minnesota River, and serves as a spillway for seasonal floodwaters as it flows southward in a wide curve to rejoin the river below Granite Falls. Still further south, Hazel Creek flows through a deeply eroded and beautifully wooded channel to empty into the Minnesota.

There are no large lakes in the county, but ponds and sloughs are plentiful on the table lands above the Minnesota Valley. Trees grow only in the protected places where water collects, or along the river, for the rainfall of the area is insufficient, and the prevailing westerly winds are too arid, for the development of natural timber. Groves have been planted for windbreaks but the trees do not grow to great size.

The Minnesota Valley at this point presents to the incoming traveler a panorama of extraordinary beauty. Coming suddenly to the edge of the table land he sees the steep descent as the land drops away to form a valley which is from 130 to 175 feet deep, and from one and a half to two miles wide. In it, blue in the distance, meanders the river. Falling over an old divide at Granite Falls, it foams up whitely around the great blocks of granite cast in its bed by some ancient volcanic disturbance; then spreading out into quiet water it narrows again to pass between grey granite promontories which bear the marks of glacial action. At Minnesota Falls it drops over another old divide in a fall of fifteen feet, making a total descent of ninety feet in less than two miles.

Upon the valley floor areas of granite outcroppings alternate with bottom lands of rich black soil. The glacial waters of the ancient River Warren, which once filled this valley from bluff to bluff, cut deeply into the glacial till and exposed the bedrock which here and there thrusts up through a thin crust of earth. Trees fringe the river banks, creep up the hillsides, and even rock ledges give root-hold to fern and honeysuckle, wild plum, thorn apple and wild grape.

At its deepest point the valley is 835 feet above sea level. The table land which spreads westward from it reaches an elevation of 1737 feet above sea level as the rolling prairie gives way to the more hilly terrain of the region called Antelope Hills, near the South Dakota line.

The name Yellow Medicine has reference to the moonseed (menispermum canadense), a plant valued by the Indians for its medicinal qualities. From the long, slender, bitter root of this plant came the yellow medicine which, according to legend, was sought by an Indian maiden to cure the sickness of a great chief. The moonseed grows in other parts of the state, but its presence in the thickets bordering the Yellow Medicine seems to have been the distinguishing characteristic of the river. The first white men knew the place by its Indian name, Pehijutazi, and its English equivalent appears upon the earliest maps of the country.

Indian villages flourished in the wooded valley of the Yellow Medicine, for it was a favorite camping place; quantities of arrow heads and pottery shards found in the vicinity indicate that there were villages here, and even today the Indian village three miles south of Granite Falls bears the name Pehijutazi among its own residents.

The names given to the twenty-one townships of the county reflect the history or topography of the country, and the national origins of the settlers who named them. The three fractional townships bordering the Minnesota River are Stony Run, Minnesota Falls, and Sioux Agency, which are descriptive and historical names. The four townships running diagonally parallel to them are Lisbon, Hazel Run, Wood Lake and Echo. Friendship, Sandnes and Posen, which complete the hammer head, were and are predominantly Norwegian. Next are Tyro and Normania, Omro, Swede Prairie (named for the first four Swedish families settling there); then Oshkosh, Burton, Hammer, Wergeland, Norman, Florida and Fortier. The last-named three townships have always had a somewhat larger percentage of non-Scandinavian inhabitants. Fortier was named for Joseph Fortier, one of the first settlers and also the first sheriff of the County.

The recorded history of Yellow Medicine County properly begins in 1851, for in that year the forces were set in motion which were to make the region historically notable. It might also be said that those forces were given impetus still earlier, when the end of the war of 1812 set people moving westward in search of new homes; or with the financial crisis of 1837 which caused more prospective settlers to look toward the free lands of the west in the hope of recouping lost fortunes. And there can be no question but that the rivalry between the new cities of the middle west, Chicago and St. Louis, for the advantage of being the railroad center from which lines would creep westward, also had some influence; for the Chicago proponents had to face the hard fact that lines running west from that city must pass through Indian territory unless the tribes could be shifted to some other region.

All these forces merged and became vocal in the clamour for more lands for white settlement. In 1849 the only portion of the state open to settlement was the area purchased from the Indians through the negotiations of Zebulon Pike. The region which was to become Yellow Medicine County was inhabited by the fierce and warlike Sisseton and Wahpeton tribes of the Sioux with the Wahpekutes and Mdewakantons to the east and south. All the lands south of the Minnesota River were claimed by the Sioux, and to the north were the Chippewas, their ancient enemies. Sporadic warfare went on between the tribes, for how was a young warrior to win a feather for his headdress except by killing an enemy? It was therefore not a region favorable to exploration, although access to it could be gained by way of the Minnesota River.

Some historians believe that Baron de la Hontan ascended the Minnesota River in the winter of 1688-89. If this is correct, then de la Hontan would have passed along the eastern border of the county, and been forced by the nature of the terrain to pass through some part of it. But the weight of opinion is that de la Hontan's "Long River" was not the Minnesota; and although fur trappers and traders, French-Indian voyageurs and couriers des bois must have gone up and down the river and across the prairie, no white man left a record of such a journey, until the nineteenth century was well on its way.

The first white men known to have made use of the inland waterway, and therefore to have at least touched upon Yellow Medicine County, were members of the Selkirk Colony and officers of the Hudson's Bay fur trading company, who in 1819 made a journey up the Red River of the North, the Bois des Sioux River, to Lake Traverse, across the divide to Big Stone Lake, and thence down the Minnesota River to its mouth. Their purpose was to buy seed for the Colony at Pembina, where the crop of the previous year had been destroyed by grasshoppers; and Prairie du Chien was the nearest source of supply. It is of record that the party touched at Fort Snelling both going down and passing up the river. In April, 1819, they reached Prairie du Chien, purchased wheat, oats, peas, and some chickens, and loaded it all on a boat (some say a flat boat, others "three Mackinaw boats manned by six hands each"); and began the long journey back to Pembina. In ascending the Minnesota they would have had the advantage of spring flood-waters, but could not avoid portaging around the falls at Minnesota Falls and Granite Falls, and so would have been the first white men known to have been even briefly in Yellow Medicine County.

The first exploration of the upper Minnesota Valley was made by Major Stephen S. Long, who in 1825 was ordered by the government to explore "the St. Peters to its source." In the summer of that year Major Long headed an expedition composed of twenty soldiers from the fort, a geologist, an artist, and other observers, and proceeded up the Minnesota, half the party going by water and half by land. Again the need to portage around the falls would have brought white men into Yellow Medicine County. Still later, Major Sumter's military expedition to impress the Indians doubtless passed through some part of the county.

The first white men actually to settle in the territory passed through it in 1835 on their way to the Lac qui Parle region, but eventually they were to return and become the first residents of the county. In the spring of that year Dr. Thomas S. Williamson arrived at Fort Snelling with a missionary party, in search of a place to establish a mission in Indian territory. The question of where to go was answered by Joseph Renville.

This rather remarkable descendant of an early French adventurer had long been useful to government. He had served the English as a captain in the forces at their northern posts; and when the United States belatedly asserted claim to the great northwest territory Renville transferred his allegiance to the government. He served as guide, and interpreter to Major Long's expedition, for on his mother's side he was of the Sioux and he had married an Indian woman of that tribe. He was one of the voyageurs and couriers de bois who played a colorful part in the early history of the country. By 1835 he was the owner of a trading post at Lac qui Parle, and father of a numerous brood of Indian children for whom he wished to provide religious instruction. With this purpose in mind he offered the missionaries his help and protection in building a mission near his post.

So on June 22 the missionary party set out from Fort Snelling in the fur company's Mackinaw boat for the first part of their journey. At Traverse des Sioux they transferred to Renville's Red River ox carts and traveled overland the rest of the way. At Lac qui Parle they lived for a year within Renville's stockade, then moved into the mission built on the north bank of the Minnesota River. From this point they carried on missionary work throughout the territory.

One of the first acts of the first territorial legislature of the newly created Minnesota Territory was to demand the purchase of more lands from the Indians. As a result messengers were sent to the tribes of the Upper Sioux requesting them to attend a conference at Traverse Des Sioux in the summer of 1850. Although the Upper Sioux were believed to be more amenable to persuasion, they were reluctant to part with their remaining lands, and only a few responded. But the idea persisted, and in the summer of 1851 the tribes were finally gathered together at the meeting place for a treaty conference, in the course of which they reluctantly agreed to part with all their lands in Minnesota except a strip ten miles wide on each side of the Minnesota River from the mouth of the Yellow Medicine to Lake Traverse, which was to be and remain "forever" their reservation. Later, following their example, the tribes of the Lower Sioux sold their lands also, retaining a similar strip of land from New Ulm to the mouth of the Yellow Medicine.

The southern boundary line of the lands reserved to the tribes of the Upper Sioux passed diagonally through the present townships of Echo, Wood Lake, Hazel Run and Lisbon, which was the part of Yellow Medicine County most accessible for settlement.

The price to be paid for the lands was a little more than a million and a half dollars, or about twelve and a half cents an acre; and for convenience in making the payments which were to cover a period of fifty years, and furnishing certain services designed to improve, educate, and civilize the Indians, two agencies were to be set up within the reservation. One was to be at Redwood, and the other at Pehijutazi.

Two men who were familiar with the territory attended this conference: the Rev. Stephen R. Riggs and Dr. Thomas S. Williamson. At this time Rev. Riggs was in charge of the Lac qui Parle mission and Dr. Williamson was at Kaposia, Little Crow's Village, to which he had been invited in 1846. Kaposia was located just below the present site of Saint Paul, and since the Indians living there would have to move westward onto the new reservation Dr. Williamson immediately began to plan for a new mission at the Upper Sioux Agency at Pehijutazi.

In the summer of 1852 Dr. Williamson went to Pehijutazi and there began the construction of a home for his family. It is eminently fitting that a county named for a medicinal plant should have had a medical man for its first resident.

Dr. Williamson had been born into a family with a tradition of service in the church, but he had first chosen medicine as his field of endeavor. He had begun his medical practice in Ripley, Ohio, married one of the belles of that city, Miss Mary Poage, and built up a good practice. But as the years passed the conviction grew upon him that his mission in life should be to serve God and mankind through the church, and he began the training which led to his ordination as a minister of the Presbyterian church and a missionary of the American Board of Missions.

In this way Dr. Thomas S. Williamson became the first resident of Yellow Medicine County and the first doctor to practice there; for according to the Rev. Mr. Riggs, Dr. Williamson's ministry and his medical skill went always "hand in hand" throughout his long life. While the Indians did not readily give up their traditional tribal practices and medicines, they were willing to let the doctor try his skill along with their own medicine men. Dr. Williamson was a skilled physician and a man of deep natural piety; his sympathy for the Indians was sincere and he never failed them.

The winter of 1852-53 was a severe one. The Williamson family suffered, almost starved, in their new home at Pehijutazi. But in the summer crews began work on the buildings for the Agency, choosing a site upon the bluffs overlooking the Minnesota River, about a mile from the mouth of the Yellow Medicine River. The logs used for construction of the first Agency buildings were felled in the timber along the Yellow Medicine, and later a portable sawmill was erected on this river.

The first Agency officials arrived at Pehijutazi in the summer of 1854, and with them came the Agency doctor, Dr. Jared Waldo Daniels, whose brother Asa Wilder Daniels served in the same capacity at the Lower Sioux Agency. Late in the summer the Rev. Stephen Return Riggs also came to establish a new mission. Joseph Renville's death was followed by the burning of the mission; so the Rev. Riggs put his household goods on a boat at Lac qui Parle and came down river to establish his own mission at Hazelwood, on Hazel Creek.

Up to this time medical practice in Yellow Medicine County had been entirely in accordance with the Indian tradition. It consisted of the use in various ways of medicinal herbs gathered and dispensed by the women and the medicine men, potions brewed of plant, animal, and insect life, chants, charms, and superstitions. Yet after the manner of all primitive peoples, they had discovered some remedies for common ills. It is suggested that many white settlers, far from medical aid, made use of such Indian remedies, and lives were saved by them.

Dr. Williamson's route of travel to the territory in 1835 had been overland to Galena, Illinois, then by steamboat up the Mississippi to Fort Snelling. By 1854 the railroad line had reached Madison, Wisconsin, and in 1857 the Milwaukee and Mississippi Railroad was able to advertise a train service from Chicago and Milwaukee to Prairie du Chien, where it connected with "a new and superior line of steam packets, under the control of the Milwaukee & Mississippi Railroad, on the Upper Mississippi River to Saint Paul, Minnesota, and all intervening points, with stages to all points of Northern Iowa. Lands in Iowa and Wisconsin were being settled, and settlers from those states were moving northward into southern Minnesota. But the part of Yellow Medicine County which was open to settlement was still too far west, and too near the Indian country, to be desirable for settlement.

In these years the Upper Sioux Agency grew in extent and power, and became the capital of all the Indian country. The tribes gathered there to receive annuity payments, to draw upon the store of food supplies, and secure other benefits due them under the terms of the treaty. The Indians were encouraged to place their children in the government school, or in the Missionary school, and avail themselves of the doctor's services, for the white man's diseases were already making inroads upon the tribes. It was the policy of government to civilize the Indians and persuade them of the advantages of the white man's way of life. As an inducement they were given building materials if they wished to build houses, and were offered instruction in farming methods. Some twenty "farmer Indians" settled down near the agency, acquired cattle, and farmed with fair success.

The houses which the Indians built were described by Mr. Knute Glaim, an early settler who spent the winter of 1866 in an Indian house, as follows:

> "Those houses, built of brick made from clay on what is now the Ingval Imes farm, were enclosed by one row of solid brick. As soon as the weather got cold the frost would form on the inside of the brick walls, and by mid-winter that coating of frost would be more than an inch thick. It was just like living in a refrigerator. It was no wonder the Indians moved out of them." (From an interview reported in the *Granite Falls Tribune,* February 18, 1949.)

The brick of which such houses, and other buildings at the agency, were made, was manufactured at the brick yards on the Yellow Medicine to augment the dwindling supply of timber for construction purposes. The first log buildings of the Agency were all replaced by buildings of frame or brick construction. The brick yards continued in operation until about 1886.

The farmer Indian soon found that farming was not profitable, for after working all summer while his brother "blanket Indians" lived more joyously by hunting and fishing, he would have a store of food put by, but as soon as the blanket Indians ran out of food they descended upon him and literally ate him out of house and home. The community system of living was traditional, and it continues in this locality to this day, the greatest single barrier to individual Indian progress.

By 1860 the Upper Sioux Agency buildings spread for half a mile along the bluffs above the Minnesota River. Dr. Williamson's mission included many buildings, and the Riggs mission on Hazel Creek was one of the largest and best equipped of all the Indian missions. Rev. Riggs essayed to teach the Indians something about government as well as religion; the Republic of Hazelwood had its own officers.

In that eventful year the new Republican party succeeded in electing Abraham Lincoln President, and a change of administration brought a change of officers at the Upper Sioux Agency. Agent Brown was replaced by Agent T. J. Galbraith, an official who came to be cordially disliked by the Indians. In the spring of 1861 Sumter was fired upon, and Dr. Daniels resigned his post in the hope of being assigned to a regiment going south. After a few months he was appointed Assistant Surgeon to the Sixth Minnesota, but he did not go south. He was to see all of his military service in the north and northwest against the Indian tribes.

The Agency of this period has been described for us by a writer quoted in Rose's History of Yellow Medicine County:

> "On the bluffs, about 40 rods east from the Agent's house, was the government warehouse, built of brick and two stories high. In the rear, T. J. Galbraith's rooms. A little north Dr. Wakefield's residence, northwest the boss carpenter's residence, a large two-story brick building. East from our boarding house was Mr. Givens' the second agent's house, and also the house of Noah Sinks, the clerk. A mile or so away the Yellow Medicine flowed into the Minnesota River. There was timber on both streams and some on the bluffs north of the Agency. The government buildings stood on the high bluffs, one side extending and spreading out on the prairie westward. (Parker I. Pierce, in "Antelope Bill.")

Soon after Lincoln's inauguration an emissary of government assured the Indians that they would receive an additional "very rich" gift in the fall of 1861. In expectation of this the tribes came down in the fall, only to learn that the promised gift had not arrived. They waited there, while the hunting season passed, drawing upon the food stores of the Agency. When the shipment finally came snow was deep on the ground, the hunting season was past, and no food had been laid by for the winter. The "very rich" gift turned out to be only $10,000 worth of goods, or about $2.50 per Indian. Since the Indians had no food laid by they remained at the Agency, subsisting on the supplies doled out to them.

When the next payment came due in July four thousand Indians assembled at the Agency to receive their annuities. By that time the Agency supplies were almost exhausted. The rainfall had been scant, and prospects of raising corn in the little squaw patches were poor. Again the shipment was delayed, and there was much grumbling and open show of dissatisfaction over what the Indians regarded as repeated failure to fulfill the terms of the treaty. The tribes had learned by this time that they could not live solely by hunting and fishing on the lands they had left; they had become increasingly dependent upon the white man's pork and flour, which must be paid for in coin, or produce, or furs. As the weeks passed there was actual hunger among the tribes. Their credit was cut off at the stores, and many differences arose. Once more the Soldiers' Lodge, a secret order organized only for the hunt or for war, came into existence.

There were grievances of long standing, but the sum of it all was that the Indian at last realized the hopelessness of his situation.

On August 18, 1862 this discontent exploded into action. A few Indians in search of liquor touched off the uprising of 1862 when they turned upon the settlers in the little village of Acton and massacred its entire population. They then fled to the villages of the Lower Sioux and a council of war was held. Although some Indians were reluctant, all agreed that now "their hands were bloody," and they had no choice but to try to drive the white man out of their valley.

News of this decision traveled swiftly to the mission and the Agency borne by friendly Indians (some of them Renville's descendents). Under cover of darkness the people of the Riggs mission escaped to an island in the river where they spent the night. Dr. Williamson delayed, sending his young people ahead. Dr. Wakefield was away from the Agency with the Agent, and his wife took matters into her own hands. Setting out with her children on foot for Redwood, she was overtaken and picked up by a young man driving a horse and buggy. Unwittingly they were going toward the danger, and before they could reach Redwood the young man was killed and Mrs. Wakefield and children taken captive.

At the Agency Dr. Wakefield, unaware of this development, took refuge with the twenty-two men and forty children and women who remained there in the government warehouse which was "built of brick and two stories high." They had little in the way of guns and ammunition, but fortunately the Indians busied themselves first with looting and burning the stores. In the early morning hours John Other Day and other friendly Indians secured a team and wagon, and helped the refugees to escape across the river. The wounded and small children rode in the wagon while the rest of the party walked behind. In this manner they made their careful way to Fort Ridgely, which they found under seige. St. Peter was also under seige, but shortly after they had passed it was liberated by troops from the fort, so Dr. Wakefield turned back there to assist in caring for the wounded. The others made their way to Fort Snelling.

During the uprising battles were fought up and down the valley, with varying degrees of success, but the decisive battle of the Sioux war was fought at Wood Lake in Yellow Medicine County. The uprising lasted for six weeks and cost, according to Dr. Williamson's estimate, the lives of 312 settlers. Eleven lives were lost at the Agency. At the conclusion of hostilities the white captives were released and Mrs. Wakefield and children were reunited with the doctor.

After the uprising the rights of the Indians under the treaty were declared forfeit as to the lands of their reservation, and all who were suspected of taking part in it were rounded up and imprisoned.

In the makeshift prisons at Mankato and Fort Snelling the Indians were crowded together under the worst possible conditions. Food was scanty and of poor quality; confinement in close quarters led to sickness, and to make matters worse the women and children of the prisoners followed the menfolk and had to be provided for. Dr. Williamson and his son, the Rev. John Williamson, worked tirelessly with the Indians and for them, writing many letters to the President setting forth evidence of extenuating circumstances in particular cases, while week after week the court martial sifted evidence. In the end the court martial pronounced sentence of death upon four hundred Indians.

With characteristic thoroughness President Lincoln himself examined the evidence and reduced the number sentenced to death to thirty-nine. The condemned Indians were executed at Mankato; the others were transported to their new reservation in the west in the summer of 1863. Loaded upon steamboats, they were taken down the Mississippi and up the Missouri to Crow Creek. The Rev. John S. Williamson has written this account of the journey:

> "The mortality was fearful. The shock, the anxiety, the confinement, the pitiable diet, were naturally followed by sickness. Many died at Fort Snelling. The steamboat trip of over one month under some circumstances might have been a benefit to their health, but when thirteen hundred Indians were crowded like slaves on the boiler and hurricane decks of a single boat, and fed on musty hard tack and briny pork which they had not half a chance to cook, diseases were bred which made fearful havoc during the hot months, and the 1,300 souls that landed at Crow Creek June 1, 1863, decreased to 1,000. So the hills were soon covered with graves."

All of Yellow Medicine County was now open to settlement, but for three years no white settler came to live in the region. Indian and white alike shunned the scene of bloodshed, and the ruined buildings lay undisturbed.

At the end of the Civil War there was the shift in population which is the aftermath of all wars, and new settlers flowed in upon the middle western states. "Uncle Sam is rich enough to give us all a farm" was the popular song, and literally true. The Homestead Act of 1859 made taking up of claims to land little more than a formality. Its purpose was simply to hasten the settlement of the territory. As the population increased the nine counties established by the first legislature had been divided and subdivided, and in 1865 Redwood County was created, and embraced within its borders all the territory from its present eastern line to the South Dakota border.

When the first settlers came to what is now Yellow Medicine County it was a part of Redwood County. They came in the summer of 1865, civil war veterans and settlers who had located in the southeastern counties for a few years on their westward trek. John Winter had come from Canada to locate briefly at LeSueur; Benjamin F. Saunders was a veteran; George E. Olds had brought his family from Massachusetts, settling in Olmsted County. He had worked in railroad construction as a surveyor, and for most of his life combined this calling with farming. Joseph Fortier had been in the region as a clerk for Myricks Store at the Agency, and there were also George S. Johnson and D. P. Lister, veterans of the Civil War, and Hiram Hodgkin, brother-in-law of George E. Olds, who came in 1865.

(To be continued in the July issue)

President's Letter

A DIFFICULT DECISION

It may come as a shock to members of the Minnesota State Medical Association to learn that a special assessment was voted by the House of Delegates to furnish a fund to undertake care of our indigent members. This action was taken in Saint Paul at the 100th Anniversary meeting of the Association, and delegates from the county medical societies took the matter under serious consideration before acting.

It is probable that the House of Delegates experienced the same sense of shock when they learned that not enough funds were secured by voluntary subscription to make an adequate start in caring for our indigent. You will recall that this voluntary project was begun as a result of House of Delegates action at the 1951 annual meeting.

Naturally, there is some doubt in the minds of those attending the House of Delegates session, whether the action was wise, but it probably will do no harm if doctors understand the purpose and if the fund can stand as a single assessment, after which voluntary subscriptions can be resumed.

It should be emphasized that this action was taken by the House of Delegates, representatives to which are elected by each county medical society in the Association. The prevailing feeling seemed to be that the delegates regretted the necessity of taking such drastic action, but that the worthiness of the fund and previous unsatisfactory results required quick and decisive action.

Admittedly, this project can be a thorny subject. The Council, directed by the House to work out details, has appointed a committee to make a quick study and evaluation of the problem, and to discover the best means of utilizing the monies raised.

The final plan which the committee evolves may not be perfect and may require revision as experience dictates, but I am sure there will be little or no dissension from the guiding principle—that medicine can and will take care of its own needy members.

Conrad J Campbell

President, Minnesota State Medical Association

Editorial

Carl B. Drake, M.D., *Editor;* George Earl, M.D., Henry L. Ulrich, M.D., *Associate Editors*

THE STATE MEETING

THE CENTENNIAL meeting of the Minnesota State Medical Association in Saint Paul in May fulfilled expectations for an outstanding meeting in celebration of the 100th anniversary.

Registration figures showed 1907 physicians; 410 nurses, dietitians, technicians, social workers and medical secretaries; 159 scientific exhibitors; 536 commercial exhibitors; 544 Woman's Auxiliary members and 836 guests (total 4,392).

Dr. Justus Ohage of Saint Paul was chosen president-elect and will serve as president in 1954. He is the son of the late Dr. Justus Ohage of Saint Paul who also served as president of the State Association in 1895. It is interesting to note that the only other combination of father and son to serve as presidents of the State Association were Dr. W. W. Mayo, president in 1873 and his sons, Dr. W. J. Mayo, president in 1894 and Dr. Charles H. Mayo, in 1906.

Other officers chosen were Dr. Paul C. Leck of Austin, first vice president and Dr. Vernon D. E. Smith of Saint Paul, second vice president. Dr. B. B. Souster of Saint Paul and Dr. W. A. Condit of Minneapolis were re-elected secretary and treasurer, respectively. Dr. C. G. Sheppard of Hutchinson was re-elected speaker of the House of Delegates and Dr. Haddon Carryer of Rochester was re-elected vice speaker.

District councilors elected were: Dr. J. M. Stickney, Rochester, First District; Dr. R. C. Hunt, Fairmont, Second District (re-elected); Dr. A. O. Swenson, Duluth, Third District (re-elected).

Drs. F. J. Elias, Duluth, O. J. Campbell, Minneapolis, and George A. Earl, Saint Paul, were all re-elected delegates to the American Medical Association.

The State Association meeting in 1954 will be held in Duluth and in 1955 in Minneapolis.

At the annual banquet which was attended by about 500 members and guests, some nineteen members were admitted to the Fifty Club, limited to those who have practiced fifty years. They were Drs. William F. Braasch, Rochester; Charles F. Brigham, and Richard O. Julian, St. Cloud; John J. Catlin, Buffalo; Theodore L. Chapman and Olin W. Rowe, Duluth; Don F. Fitzgerald, Wayzata; John H. Higgins, Harry G. Irvine, Henry W. Noth, Anton G. Wethall, Minneapolis; Joseph A. Poirier, Forest Lake; Auvigne M. Randall, Ashby; Stella L. Wilkinson and Frederick C. Schuldt, Saint Paul, and Benedik Melby, Blooming Prairie.

Also announced at the banquet was the awarding of a distinguished service medal to Dr. Julian F. DuBois of Sauk Center, secretary of the Minnesota State Board of Medical Examiners since 1935, past president of the Federation of State Medical Boards in 1942 and president of the American College of Physicians and Surgeons in 1947, and elected a member of the National Board of Medical Examiners in 1950. Unfortunately, Dr. DuBois was unable to be present to receive the award. Dr. Carl B. Drake, Saint Paul, was also awarded the Association's distinguished service medal for his labors as editor of MINNESOTA MEDICINE for the past thirty-four years.

The award for the best scientific exhibit tendered each year by the Southern Minnesota Medical Association went this year to Drs. J. J. Wild and John Reid of the Department of Electrical Engineering of the University of Minnesota for their exhibit entitled "Echographic Cancer Diagnosis." Honorable mention went to Dr. Kinsey M. Simonton of the Mayo Clinic for his exhibit entitled "Surgical Management of Chronic Mastoiditis."

The Art and Hobby Show displayed nearly 200 entries and attracted much interest. The Popularity Award went to a portrait of "A Lady" by Dr. Alex Ratelle, it having received the greatest number of votes by visitors.

Among the water colors, first prize went to "Log Cabin" by Dr. Daniel De Gallier; second prize to "St. Catherine College Chapel" by Dr. Andrew Christiansen; and third prize to "Vermont Hills" by Dr. Samuel F. Haines.

In the oils, first prize went to "Winter Wonderland" by Dr. J. Benepe; second prize to "White River, Bad Lands" by Dr. James H. Crowley; and third prize to "Flood Waters" by Luisa Kerschbaumer.

In photography, first prize went to "Sunwapta Valley" by Dr. John P. Wendland; second prize to "Smiling Girl" by Leonard Arling; and third prize to "The Shop" by F. H. Walter.

The centenary meeting has passed into history. A summary of the meeting would not be complete without mention being made of at least a few of the noted out-of-state visitors who added so much to the program. Dr. Richard R. Trail, of London, head of the Papworth and Enham-Alamein rehabilitation centers for the tuberculous in England, was the St. Joseph's Hospital Centennial Lecturer and addressed six medical organizations in the Twin Cities during his brief stay. He proved himself an authority in his specialty of chest diseases. Since the meeting, Dr. Trail has been awarded the honorary title of Commander of the British Empire. Sir Alexander Fleming, director of St. Mary's Wright Fleming Institute of London, who also took part in the St. Joseph's Hospital centenary celebration, spoke with authority on the subject of penicillin. Dr. Alton Ochsner, chairman of the department of surgery at Tulane University, is as outstanding a clinical teacher as any surgeon in the country and contributed two fine addresses to the program. These addresses, as well as those presented by the other outstanding visitors and Association members, will appear in MINNESOTA MEDICINE beginning with the August issue.

INFLUENZA AND PNEUMONIA

LITTLE progress has been made so far in the treatment and prevention of influenza. Even the differential diagnosis of influenza from influenza complicated by a pneumonia, from lobar pneumonia, or from an acute respiratory infection, is often difficult. The classification by life insurance companies of influenza and pneumonia under one heading as a cause of death seems therefore reasonable.

Influenza and pneumonia still constitute an important cause of death, being the third in importance, cardiovascular disease being first, and cancer second. Though the death rate from influenza and pneumonia has dropped nearly three-fourths since 1936, and a half during the past eight years, there were 51,000 deaths from this cause in 1951. With the advent of the sulfas fifteen years ago the death rate from influenza and pneumonia began to decline. This decline continued with the discovery of the antibiotics. How much these two drugs benefit in influenza is debatable. We doubt whether they are of any service in the treatment of influenza itself but believe their administration is justifiable for the purpose of preventing a complicating pneumonia.

Influenza occurs each year more often in the winter and early spring, three-fifths of the deaths from this disease occurring in the first five months, from December through April each year. The mortality is much higher in males forty-five years of age and over than in females of a similar age, and is particularly severe in infancy and old age. Those with chronic diseases are more likely to succumb to influenza and pneumonia than otherwise healthy individuals. This fact is confirmed by studies made by the Public Health Service which show an increase in deaths from all causes other than influenza and pneumonia in the weeks which show an excess mortality for these two causes.

It would be too much to expect a 100 per cent cure of pneumonia by any drug. Marvelous as the results are in pneumonia from the administration of the antibiotics many instances are encountered in which they prove futile. The development of resistance to certain antibiotics on the part of certain bacteria is given as the explanation of such failures and the reason for refraining from prescribing an antibiotic for each and every infection, or danger of infection, which is the present-day vogue.

One interesting development in the study of influenza epidemics is the establishment of a world-wide network of influenza laboratories and a world influenza center in London for a compilation of information as to the influenza virus strains responsible for epidemics in various parts of the world. This is one of the worth-while activities of the World Health Organization. Another reference laboratory in New York, known as the Strain Study Center for the Americas, is doing the same recording for the Americas. Epidemics due to the same influenza virus strain occurring in Africa or Australia in May have been followed to London in January. The establishment of these regional laboratories should prove of value in designating the proper vaccine for use in a certain locality. One of the reasons for frequent failure in the vaccination program for influenza has been need for the use of vaccines for specific strains of the influenza virus.

The influenza epidemic which was widespread not only in America but in central Europe, Hawaii and the Philippines, in January and February of this year was due to virus A prime and was fortunately comparatively mild. The epidemic of 1918 with its terrific mortality has not been forgotten. Nor has it been completely explained. It is not known how effective the sulfas and antibiotics would be in combatting a return of such an epidemic. The severity of an epidemic depends on the virulence of the specific influenza virus strain responsible and the degree and prevalence of immunity which may be present in the community as a result of previous recent epidemics due to the same virus strain. One discouraging factor is that immunity resulting from either infection or vaccination is not long lasting.

It would seem that as a result of the establishment of influenza laboratories it will be possible to designate the particular influenza virus responsible for any specific epidemic and the particular vaccine which should be used. The development of a longer lasting vaccine seems highly desirable.

THE DEAN'S PAGE

Beginning with the June number of Minnesota Medicine will appear a short article on some phase of the University of Minnesota Medical School which will be supplied by Dean Diehl's office. This monthly article will provide a contact between the Dean's office and the medical profession of the State. It is the wish of the profession to co-operate in every way with our medical school and it is just as true that the medical school wishes to foster close relationship with the medical profession. The article which will appear each month in Minnesota Medicine should further mutual understanding between the medical school and the medical profession of the state.

WORLD MEDICAL ASSOCIATION

THOSE who do not know of what the World Medical Association is composed and what its purposes are can get a clear idea from a reading of the President's Page in the April 25, 1953, number of the JAMA. We venture the opinion that not one in ten of our members knows the difference between the World Health Organization and the World Medical Association.

The World Health Organization, a branch of the United Nations, represents the governments of the world and is supported entirely by government funds. The World Medical Association, on the other hand, is a medical association composed of the national medical associations of forty-three different nations. No medical associations of countries behind the iron curtain are included. It is supported entirely by dues paid by the member associations and voluntary contributions and is independent of government and politics. Whereas, the AMA is made up of component state medical associations, the World Medical Association is made up of component national medical associations.

It is fortunate that we have members of our national medical association with breadth of vision and the energy to devote their time and talents not only to the problems of medicine in county, state and nation but in the world at large. Medical men like Dr. Louis H. Bauer, president this year of the AMA, and Dr. Elmer Henderson, past president, have each served as officers of the World Medical Association concomitantly with their tenure in their AMA offices, the former as secretary general and the latter as president. The scientific interests of the medical professions of all countries are similar although problems differ. The World Medical Association can speak for 700,000 physicians throughout most of the world and should possess authority.

The aims of the World Medical Association, according to Dr. Bauer, are: "To effect a better liaison among the doctors of the world; to serve as a forum for discussion of mutual problems; to disseminate information; to raise the standards of health, medical education and medical care throughout the world; to represent the practicing profession before other international bodies, when matters of health and medicine are discussed; and to give the average doctor a voice in international affairs; and to improve international relations."

One matter in which the World Medical Association served a most useful purpose was in the publicity it gave to the machinations of the International Labor Organization, editorial mention of which was made in our September, 1952, number.† As a result, Senator Bricker of Ohio has submitted a bill to Congress which will forestall the adoption of foreign idealogies by the mere majority vote of the United States Senate.

---

†Editorial: Back door entrance. Minnesota Med., 35:823 (Sept.) 1952.

Medical societies and individuals cannot join the World Medical Association directly. However, in the United States a World Medical Association United States Committee, Inc., has been established and can be joined by individuals, medical societies and business organizations. In this issue (page 653) appears a full-page advertisement, which we are happy to donate to the World Medical Association in order to further its altruistic purposes.

ARMED FORCES DISCOUNT REPORTS ON HEPATITIS RATE

Following press reports of high incidence of homologous serum jaundice (hepatitis) among U. S. troops getting plasma, the Armed Forces Medical Policy Council and Army Surgeon General's office decided the record should be set straight. These points were made: (a) Studies show that 23 per cent of the severely wounded receiving 5 to 10 units of plasma contract hepatitis from 60 to 180 days after the infusions, but mortality rate is only one in 1,000 cases, (b) while serum albumin has been found free of hepatitis virus, there isn't enough supply to replace plasma, (c) A National Research Council committee is working on sterilization of plasma but until it arrives at a solution, plasma will continue to be used by the services. Officials said they were anxious that the public not stop donating blood because of the misinformation on plasma.—*A.M.A. Washington Letter No. 7.*

ERADICATION OF TUBERCULOSIS

We have talked about the eradication of tuberculosis as if within a reasonable period that phenomenal condition might become an actuality. It might be well for us to drop this word and think more in terms of possible control. Even though a specific cure or a specific vaccine might be found, it would require generations to discover the last infected person. We look with much pride on the fact that today less than one-half of one per cent of dairy herds in this country are infected. The control program was started in 1916. Its basic features were tuberculin testing, slaughtering of infected animals and, finally, prohibiting the addition of new animals to the herd unless they were tuberculin negative. Thus, for many years this ideal, controlled program has resulted in eliminating the majority of infected cattle before clinical disease has developed and has thereby sharply reduced the chance for spread of infection. Nevertheless, despite these heroic efforts, the significant fact remains that there still exists small reservoirs of infection in our herds. The veterinarian is ever vigilant in his program, for the slightest neglect has again and again proved that, where the tubercle bacillus exists, it can flare into a consuming flame.—H. R. Edwards, M.D., *The Am. Review of TB,* March, 1952.

Minnesota Department of Health

REPORTING OF ALL DEATHS DUE TO OR ASSOCIATED WITH PREGNANCY

Since July 20, 1951, the State Board of Health has required the reporting of all deaths of women due directly to pregnancy or the puerperium as well as all female deaths where pregnancy was present but was not the cause of death and the postpartum period for three months following delivery. This does not include stillbirths or infant deaths.

The regulation is quoted below for the information and guidance of physicians and hospitals.

Reg. 125. Any death associated with pregnancy (including abortion and extra-uterine pregnancy) or the puerperium (for a period of three months' postpartum), whether or not it is the actual cause of death, will be reported to the Minnesota Department of Health, Division of Maternal and Child Health by mail within three days after such date, by the attending physician and by the hospital where the death occurs.

The following information will be included in the report:

Name and address of woman

Date of death Age at death

Cause of death

Name of attending physician and address

Name of hospital and address

The above report is in addition to the usual report by death certificate to the Division of Vital Statistics as now required by law.

RELATIONSHIP BETWEEN DISEASE AND SOCIAL FACTORS

More field studies are needed to establish quantitative relationships between disease and social factors such as age, race, sex, occupation, and economic status. These factors and their impact on community disease patterns are our counterparts of the clinicians' measurement of pulse, blood pressure, basal metabolic rate, etc., in the individual. They, and their relationship to disease and health deserve more attention than we have afforded them.—Berwyn F. Mattison, M.D., *American J. of Pub. Health,* Dec., 1952.

The Dean's Page

In response to a long standing and oft repeated invitation of the Editorial Board of Minnesota Medicine, the administration and faculty of the Medical School will utilize a page of this journal each month to inform the physicians of the state about the policies, activities, plans, and problems of the school. To be able to do this is a privilege for which the Medical School is deeply appreciative.

It is common knowledge that the standards of medical practice and the over-all reputation of the medical profession in an area are determined to a great extent by the quality and the reputation of the medical school serving that area. Consequently, the maintenance of high quality medical education has always been of deep concern to individual physicians as well as to the American Medical Association and its constituent state and county societies.

As I pointed out in my discussion of "Medical Schools and Medical Education over the Past Century" (Minnesota Medicine, April, 1953), medical schools of today are vastly more complex and are expected to meet demands and responsibilities more far-reaching than ever before. Even during the years of my own connection with the University of Minnesota Medical School, beginning as a medical student in 1914 and as a member of the staff in 1920, the quality, the tempo, and the standing of this institution have been completely changed.

The primary purpose of our Medical School is today, as it has always been, the training of general physicians to provide the best of medical care for the people of this area. Changes in the subject matter and methods of instruction have occurred and will continue to be made whenever improvement seems possible.

In graduate medical education for the training of specialists and in continuation medical education for physicians in practice great developments have occurred. Even more dramatic have been the advances in medical research.

It is with all of these developments that we are anxious to acquaint the physicians of the state. The Medical School wants and needs your interest, your understanding, and your support. We hope that this series of articles will contribute toward that end.

Harold S. Diehl
Dean, Medical School,
University of Minnesota

Medical Economics

Edited by the Committee on Medical Economics
of the
Minnesota State Medical Association
George Earl, M.D., Chairman

ASSOCIATION DUES ARE COMPARATIVELY SMALL

Active members of county, state and national organized medicine may not realize the low figure their dues amount to when compared to those of the cultists.

Minnesota, for instance, has state dues of officially $40 per year, with national dues amounting to only $25 per year and county dues varying somewhat around those two figures. This should be critically compared with the dues charged of chiropractors in some parts of the country. The Indiana Federation of Chiropractors collects $240 a year from each member. This figure is quoted in the April issue of *Medical Economics* which also has this to say about the utilization of that money:

> "Most of the money goes to support the manifold promotional activities of the trade; some is spent to help extricate individual members from legal entanglements.
>
> "There's no escaping the fact that the chiropractic associations do a highly effective job in terms of service to members. If their energy, shrewdness, money and devotion were used in a better cause, the M.D. would have to give them his unstinting admiration."

Medical Economics puts its conclusion in the form of a warning to medical practitioners:

> "As it is, in these days of booming practices, some medical men shrug off the chiropractor as a minor nuisance; they dismiss his doctrine as a joke. In doing so, they lose sight of the implication in many a patient's tombstone epitaph: that there's nothing funny about dying."

SOCIAL SECURITY SURVEY TERMED HARD TASK

One of the greatest tasks undertaken by the Eisenhower administration is a thorough overhaul of our colossal system of social security "from the cradle to the grave." This statement was made by Arthur Sears Henning in a series of articles quoted in a recent issue of *Insurance Economics Surveys.*

Mr. Henning traces the rapid growth of the social security system:

> "In less than two decades the system has grown until it represents 26 billion dollars in reserve funds (17 billion in old age insurance, 9 in unemployment insurance), with approximately 17 million beneficiaries who in 1952 received payments aggregating nearly 9 billion dollars. Of these beneficaries more than 4 million were retired aged employes and their dependents who received more than 1½ billion dollars in benefits."

Increases Cause Action

According to the article, many changes and increases in economic considerations are the basis for administration action to overhaul the system. It is feared that an estimated 20 million old age beneficiaries receiving 13 billion dollars in benefits annually fifty years from now, and a trust fund of 106 billion dollars and payroll taxes doubled, this will have a damaging effect on the nation's economic structure.

A congressional inquiry into the system's operation under the previous administration has already been initiated. Representative Curtis of Nebraska heads this subcommittee of the house ways and means committee. One of the fields of inquiry will be "whether social security has been developed under the New Deal into a guarantee of a scale of living that for many people destroys the incentive for thrift, encourages shiftlessness and cultivates the attitude that 'the world owes me a living.' "

Twenty-Five Programs Now Operating

The report states that there are now approximately twenty-five public social insurance programs maintained by the federal, state and local governments throughout America. In 1952, there were more than 17 million beneficiaries of these programs who received pensions and other benefits aggregating $8,799,066,000. The author states:

> "Public social security on the national scale was born of the depression. Theretofore care of the destitute was universally considered the function of local government. Provision of economic safeguards against old age, sickness and death was not regarded a proper responsibility of government, least of all the national government. Security was an end to be attained by the individual through hard work and thrift within the framework of private enterprise."

"With the advent of the depression and increasing unemployment in the thirties, however," the report goes on, "tremendous pressure for the nationalization of relief developed. Roosevelt, who accurately sensed the political value of relief dispensation, swept aside the Hoover plan of state and local relief with federal financial aid and took over the job for Washington."

ILO Had Hand in Development

It is interesting to note that the International Labor Organization, the group which has lately fostered the advance of socialized medicine through international treaties, was actively supporting social insurance during its infancy.

Mr. Henning states: "By this time the international labor organization, an adjunct of the League of Nations dominated by foreign socialists, was spreading the gospel of social insurance along the lines of the contributory system which Bismarck borrowed from the German socialists as a means of defeating the liberal movement. The ILO thinkers proclaimed it the responsibility of the government to provide social security for the individual and to adopt such coercive measures as might be necessary to discharge this obligation."

FIGURES SHOW INCREASE IN LIVES SAVED

Rapid advances in medical science, steady rise in the general standard of living and improved safety measures were credited for an increase in lives saved since 1945.

A recent statistical bulletin from the Metropolitan Life Insurance Company states: "There were about 200,000 fewer deaths in our country in 1950 than would have occurred if the death rate of 1945 had continued unchanged. This is an outstanding achievement in life conservation for so brief a period. . . ."

The report goes on to state that if the mortality of 1945 by age, sex, and color had prevailed in 1950, the year would have seen almost 1,657,000 deaths, in place of the 1,452,454 actually recorded.

Decreases in mortality rates were broken down into specific diseases and other causes, and the bulletin notes:

> "This large gain in a single year reflects the decline in mortality from many diseases and various types of injury. However, most of the saving in lives is accounted for by a relatively few causes of death. . . ."

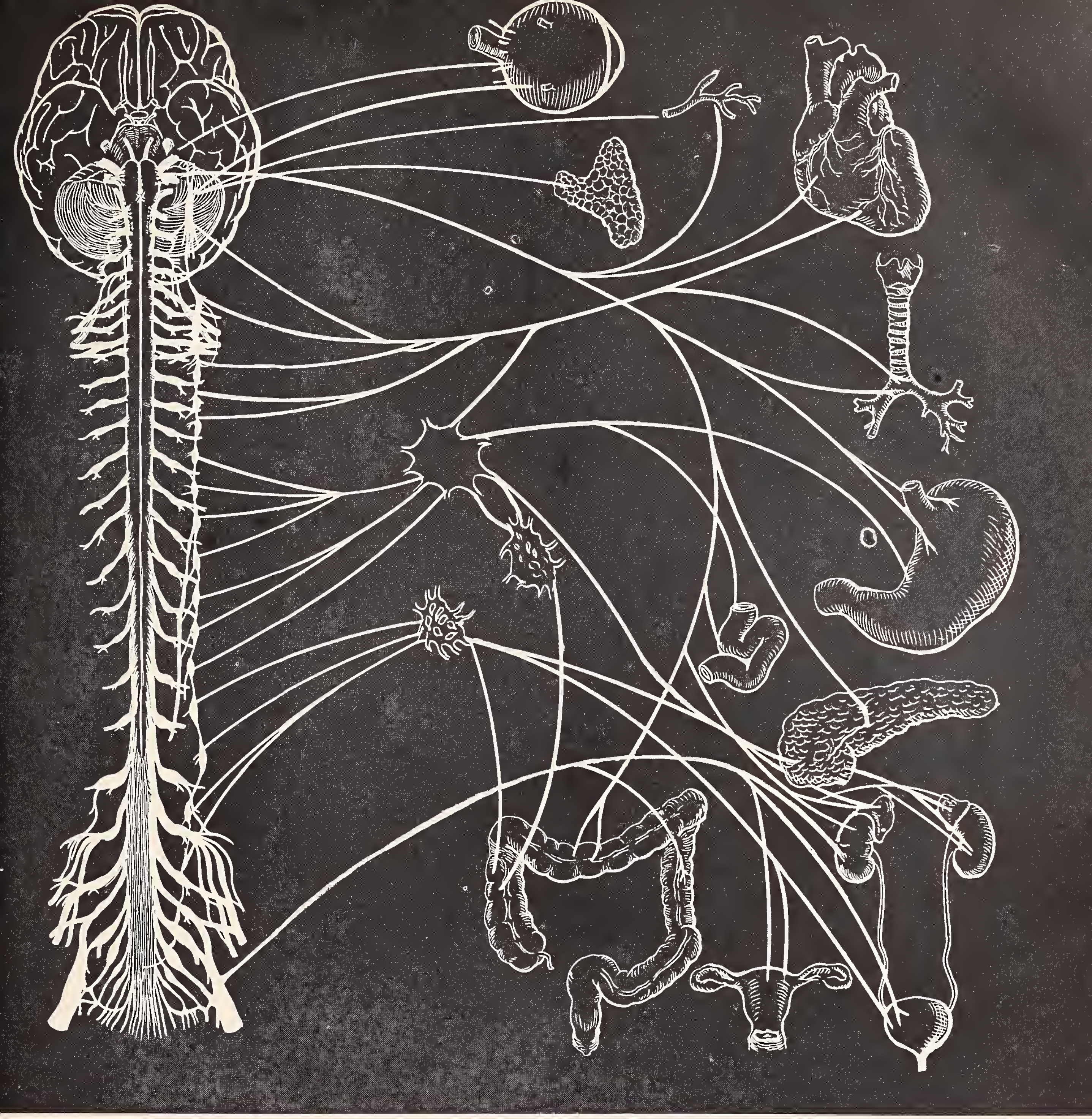
Cardiovascular Heads List

According to the bulletin, the diseases in the cardiovascular-renal field headed the list for number of lives saved. Surprisingly, the report stated, "instead of the 720,603 deaths from these conditions in our country in 1950, there would have been 771,614 such deaths if mortality had continued at the 1945 level. Thus, the actual deaths were about 51,000 less than the expected. This saving from the cardiovascular-renal diseases amounts to one quarter of the total saving in lives, and results for the most part from the reduction in mortality among women."

Significant changes in progress in communicable diseases was emphasized by the report:

> "Rapid progress in the control of the communicable diseases since 1945 has contributed substantially to savings in current mortality. Without this improvement there would have been at least 25,000 additional deaths from pneumonia and influenza among us in 1950 and almost the same number more from tuberculosis. The magnitude of these savings is even more striking when related to the actual number of deaths recorded for 1950. Thus, under the situation five years earlier there would have been over 50 per cent more deaths from pneumonia and almost 75 per cent more deaths from tuberculosis."

Again, this increase in the number of lives saved, puts added emphasis on the problem of geriatrics. More and more older people in the population are a constant challenge to medicine. In this respect, the House of Delegates of the Minnesota State Medical Association, in annual session in St. Paul on May 18, took steps to aid its own members who have reached the age where they are no longer able to earn a productive living. Doctors, too, have found themselves a part of this increase in the older population. The House of Delegates voted to create a Physicians' Assistance Fund, with every member an active supporter. The fund's details will be worked out by the Council of the Association, to be put into effect at the earliest possible date.



Excess neural stimulation over the parasympathetic subdivision plays an important role in such clinical conditions as peptic ulcer, certain forms of gastritis, pylorospasm, pancreatitis, spastic colon, bladder spasm and hyperhidrosis.

The Standard of Therapy in Peptic Ulcer

Banthīne® Bromide (brand of methantheline bromide) is a true anticholinergic which inhibits parasympathetic stimuli, acting selectively on the gastrointestinal and genitourinary systems. It exerts little or no influence on the normal cardiovascular system. Banthīne is supplied in oral and parenteral dosage forms.

ACCEPTED
COUNCIL ON PHARMACY AND CHEMISTRY
AMERICAN MEDICAL ASSOCIATION

ESEARCH IN THE SERVICE OF MEDICINE SEARLE

✦ Reports and Announcements ✦

COURSE IN MEDICAL USES OF ISOTOPES

The Special Training Division of the Oak Ridge Institute of Nuclear Studies has scheduled an advanced course covering the clinical applications of radioisotopes to be held from September 14-25, 1953. This advanced course, part of the continuing series offered by the Institute, is the second to be concerned with the medical uses of isotopes. The first was given in March, 1951.

Participation will be limited essentially to those physicians who have had clinical experience with radioisotopes.

Subjects to be discussed in the course include tumor localization, circulatory volumes and outputs, fluid and electrolyte spaces, therapy of blood diseases, theory of radiation dosimetry, radioactivity measurement, gold-198 and other colloids, interstitial and surface applications, teletherapy, iodine-131 in diagnosis and therapy, and external counting.

The course will consist of lectures, clinics, and exhibits of equipment. Speakers have been selected from among the leaders in the specific fields of interest.

Additional information and application blanks may be obtained from the Special Training Division of the Institute, P.O. Box 117, Oak Ridge, Tennessee.

SURGERY RESEARCH SCHOLARSHIPS AVAILABLE

The American College of Surgeons has established a research scholarship in surgery to be available for one who is in the last months of a residency training program. It will supply for the chosen candidate $20,000 over a period of three years. Candidates must receive the approval of the chairman of the department of surgery, the dean of the same medical school, and the authority of the executive office of the university making the proposal. The medical school supporting the nomination will be required to provide a satisfactory place to work as well as funds with which to supply necessary research. Inquiries may be addressed to The Research Scholarship Committee, American College of Surgeons, 40 East Erie Street, Chicago 11, Illinois.

INSTITUTE ON ESOPHAGEAL SPEECH

An Institute on teaching and improving esophageal speech will be held in Cleveland, Ohio, August 10 through 16 at the Cleveland Hearing and Speech Center. This Institute, the second one on Voice Pathology, is being sponsored by the American Cancer Society, National Cancer Institute of Institutes of Health, the Office of Vocational Rehabilitation, the Cleveland Otolaryngological Society, the Cleveland Academy of Medicine and the Western Reserve University School of Medicine.

Nationally known surgeons, speech pathologists and lay teachers of esophageal speech will conduct lectures, demonstrations and supervise practice in teaching esophageal speech; fluoroscopic views will be used to facilitate studies of the physiology of esophageal speech.

Non-speaking laryngectomized persons are invited to attend without charge. They may be sent by surgeons, cancer societies, societies for crippled persons and rehabilitation services.

Surgeons, speech pathologists and lay persons are invited to attend the sessions. Limited registration is necessary. Application must be mailed by July 15 to Warren H. Gardner, Ph.D., Program Chairman, 11206 Euclid Avenue, Cleveland 6, Ohio.

PAN-PACIFIC SURGICAL ASSOCIATION

Doctors are urged to make arrangements as soon as possible to attend the Sixth Pan-Pacific Surgical Congress to be held in Honolulu, Hawaii, October 7-18, 1954.

An outstanding program, including sessions in all divisions of surgery and related fields, promises to be of interest to all doctors.

The Association office has been appointed as travel agent for those attending the Congress and it is important that all hotel and travel reservations be made through the Honolulu headquarters of the Pan-Pacific Surgical Association.

For further information, please write to F. J. Pinkerton, M.D., Director General, Pan-Pacific Surgical Assotion, Suite 7, Young Hotel Building, Honolulu, Hawaii.

MINNESOTA SOCIETY OF NEUROLOGY AND PSYCHIATRY

The Minnesota Society of Neurology and Psychiatry met May 2, at St. Mary's Hospital in Rochester. The scientific program included a "Symposium on Depth Electrography," presented by: Dr. H. W. Dodge, Jr., Technic; Dr. C. B. Holman, X-Ray Aspects; Dr. Gerd Fischer, Histological Aspects; Dr. E. A. Rodin, Normal Rhythms, Including Sleep; Dr. R. G. Bickford, Olfactory Response to Electrical Stimulation and Schizophrenia; Dr. A. A. Bailey, Focal Epilepsy; Dr. W. McK. Craig, Neurosurgical Assessment; and Dr. Howard P. Rome, Psychiatric Assessment.

Dr. Howard Gaudin of Auckland, New Zealand, spoke on "Socialized Medicine in New Zealand," at the afternoon session.

UNIVERSITY OF MINNESOTA MEDICAL SCHOOL CHANGES REQUIREMENTS

University of Minnesota medical students will no longer be required to complete a year's internship for the doctor of medicine degree. The new ruling was approved May 8 by the Board of Regents.

The move is in keeping with a general trend to abolish the requirement. Following the start of World War II, medical schools throughout the country dropped the practice. Only four still retain the "extra year."

Almost forty years ago, the University of Minnesota was the first school to establish the requirement of an internship. This action was taken to give internship recognition as an essential part of a physician's training and to discourage graduates of the medical school from entering practice without it.

Although the requirement is no longer necessary at

(Continued on Page 646)

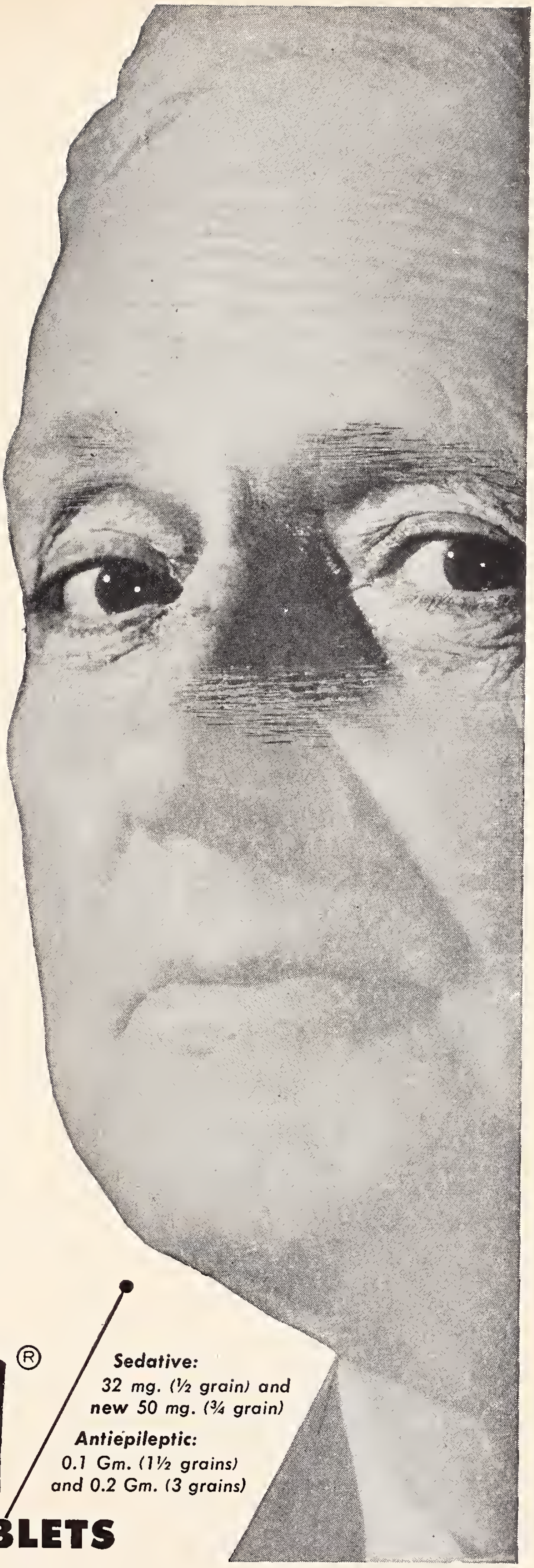
Relaxed but awake

In emotional and nervous disorders, Mebaral exerts its calming influence without excessive hypnotic action.

Mebaral is also a reliable anticonvulsant.

INDICATIONS:

Because of its high degree of sedative effectiveness, Mebaral finds a great field of usefulness in the regulation of agitated, depressed or anxiety states, as well as in convulsive disturbances. Specific disorders in which the calming influence of Mebaral is indicated include neuroses, mild psychoses, nervous symptoms of the menopause, hypertension, hyperthyroidism and epilepsy.



for sedation

Mebaral®

***Tasteless* TABLETS**

Sedative:
32 mg. (½ grain) and
new 50 mg. (¾ grain)
Antiepileptic:
0.1 Gm. (1½ grains)
and 0.2 Gm. (3 grains)

WINTHROP-STEARNS INC. New York 18, N.Y., Windsor, Ont.

Mebaral, trademark reg. U. S. & Canada, brand of mephobarbital

UNIVERSITY OF MINNESOTA MEDICAL SCHOOL CHANGES REQUIREMENTS

(Continued from Page 644)

Minnesota, Dr. Harold S. Diehl, head of the medical school, stated, "It is unthinkable that a graduate of our medical school today would enter practice without having an internship. The internship is now universally recognized as an essential part of medical education. In fact, most states require an internship for licensure and all special fields of medical practice require an internship as preliminary to specialty training."

WANGENSTEEN EDUCATION FOUNDATION ESTABLISHED

An Owen H. Wangensteen Surgical Education Foundation—honoring Dr. Owen H. Wangensteen, chief of the department of surgery—has been established at the University of Minnesota. The foundation was approved by the University's Board of Regents at their May meeting.

Initial funds to set up the Foundation were donated by Dr. F. John Lewis, associate professor of surgery; Dr. Richard L. Varco, professor of surgery, and Dr. Charles E. Rea, clinical associate professor of surgery. Purpose of the foundation is to promote advanced surgical education.

Dr. Wangensteen will act as an adviser in administration of the funds.

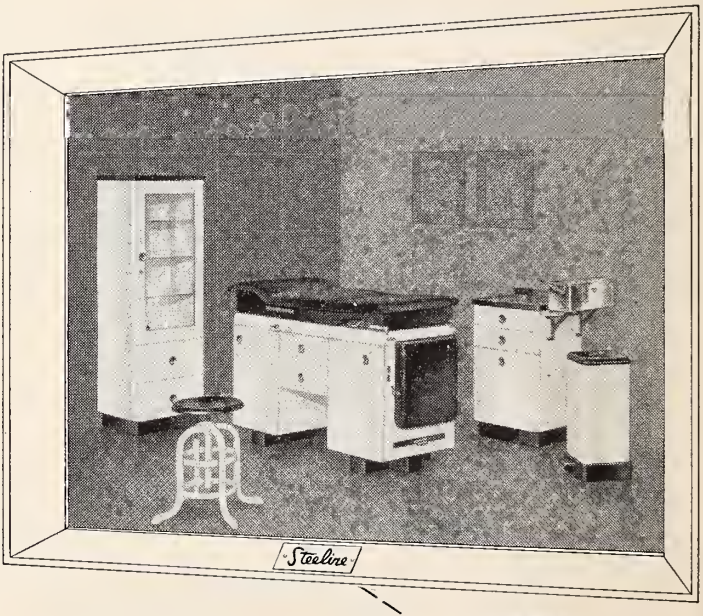
SENIOR CLASS LUNCHEON

The Minnesota Medical Alumni Association held a luncheon for the Senior class of the Medical School on Wednesday, May 27, at 12:30 p.m. in the Junior Ballroom of Coffman Memorial Union. An alumnus or a member of the Medical School faculty acted as host to each Senior student. The program following the luncheon included a brief outline of the objectives of the Medical Alumni Association and a short talk by Dr. E. T. Bell, Emeritus Professor of Pathology.

NURSE SCHOLARSHIPS AVAILABLE

The 1953 Minnesota legislature has set aside $75,000 for each year of the new biennium as a scholarship fund for the field of nursing. The scholarships are available to individuals with ability to complete the program of nursing education but who could not do so without financial aid.

Two types of scholarships are available: a maximum grant of $600 may be awarded for a student attending a *professional nurse's school*, and a maximum grant of $300 is available for the field of *practical nursing.* Requirements are that the individual must first be accepted by an accredited school of nursing (professional or practical) in Minnesota; that the student must agree to accept an educational experience in a rural hospital or a state hospital for the mentally ill as part of her education, and the student must agree to practice nursing for at least one year in Minnesota following graduation. Information may be had by writing the State Department of Education, State Office Building, Saint Paul 1, Minnesota.



design achievement in treatment room furniture

New Steeline has gone through fifteen years of gradual development to reach the fine degree of design perfection it now has. The suggestions of scores of physicians and the engineering skill of our own production plant have been combined to produce this outstanding treatment room equipment. New features such as foam rubber cushioned contour top, magnetic door latches, concealed paper sheeting holder, superb color finishes, etc., are all fully described and illustrated in our new full-color brochure—send for yours today.

FREE . . . 16-page full-color brochure complete with specifications — send for your copy today.

A. S. ALOE COMPANY OF MINNESOTA • 927 Portland Avenue • Minneapolis 4, Minnesota

E. R. SQUIBB & SONS 745 FIFTH AVENUE, NEW YORK 22, NEW YORK

Dear Doctor:

℞

Tolserol Tabs. 0.5 gram

Disp. #100

Sig: One tablet 3 to 5 times a day. Take after meals or with 1/3 glass of milk.

Usually Inadequate

This prescription is typical of many written for Tolserol Tablets*, as seen in a recent prescription survey.

Although some patients will respond to such low dosage, much better results can be obtained by following the recommended dosage: 1 to 3 grams, 3 to 5 times per day.

In accordance with this recommendation, the first dosage schedule for a patient could be:

℞

Tolserol Tabs. 0.5 gram

Disp. #100

Sig: Two tablets 3 to 5 times a day. Take after meals or with 1/3 glass of milk.

Better

Complete information on the use of Tolserol in muscle spasm of rheumatic disorders, neurologic disorders, and acute alcoholism is available from your Squibb Professional Service Representative.

Sincerely yours,

L. H. Ashe

L. H. Ashe, Manager
Professional Service Dept.

'TOLSEROL' IS A REGISTERED TRADEMARK

*Squibb 'Mephenesin'

Woman's Auxiliary

ANNUAL MEETING WELL ATTENDED

Mrs. Charles Waas
Mrs. W. H. Von Der Weyer

Attendance at the 31st annual meeting of the Woman's Auxiliary to the Minnesota State Medical Association was exceptional this year. About 300 doctors' wives attended the convention in Saint Paul, May 18, 19 and 20.

All events during the meeting brought Auxiliary members from all parts of the state. Attendance at the Executive Board meeting and lunchon on Monday was about fifty; at the annual meeting and luncheon on Tuesday it was nearly 200; and at the breakfast on Wednesday it was about 40.

Officers elected for the coming year at the annual meeting on Tuesday are: President, Mrs. Henry W. Quist, Sr., Minneapolis; President-Elect, Mrs. P. S. Rudie, Duluth; First Vice President, Mrs. C. L. Oppegaard, Crookston; Second Vice President, Mrs. Andrew Christiansen, Saint Paul; Third Vice President, Mrs. L. P. Howell, Rochester; Fourth Vice President, Mrs. O. J. Campbell, Minneapolis; Recording Secretary, Mrs. David Halpern, Brewster; Corresponding Secretary, Mrs. L. J. Leonard, Minneapolis; Treasurer, Mrs. C. W. Froats, Saint Paul; Auditor, Mrs. John K. Butler, Cloquet; Parliamentarian, Mrs. Leo Fink, Minneapolis.

Special tribute was paid to Mrs. S. S. Hesselgrave, who has terminated her long successful career as parliamentarian of the Auxiliary. It was with great regret that the Auxiliary accepted Mrs. Hesselgrave's resignation. Her long years of service have provided a lasting contribution to the Auxiliary's work.

Grateful thanks are extended to all committee chairmen for their excellent arrangements for annual meeting events. Without their valuable expenditure of time and effort, the meeting would not have been the success that it was. Visitors from all parts of the state expressed appreciation for the lovely appointments at all social functions, also for the fine reception they were given by those responsible for making them welcome.

The committee and the hostess auxiliary would also like to extend thanks and appreciation for the entire membership to the newspapers in Minnesota which did such a commendable job of covering the meeting events.

It is sincerely hoped that all Auxiliary members who attended this year's convention gained valuable information to take back to their local auxiliaries. Their presence is deeply appreciated, for without their active participation in all Auxiliary functions, Auxiliary work would be much less effective. The Auxiliary looks forward each year to having more and more doctors' wives attend all meetings, thereby making their membership more valuable to themselves, as well as to the Auxiliary as an organization.

AUXILIARY EXPRESSES THANKS

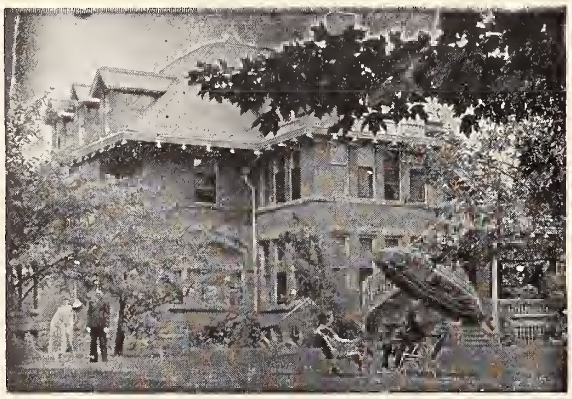
Mrs. M. I. Hauge, Clarkfield
Today's Health Chairman

Again this year, as in several years past, the Minnesota State Medical Association, in the name of the Woman's Auxiliary to the Minnesota State Medical Association, has given each of the 191 Minnesota legislators a year's subscription to *Today's Health.*

The Woman's Auxiliary would like to take this opportunity to thank a wise medical association for placing *Today's Health* with a law-making group who will become aware of the friendship and concern that the American Medical Association has for the health and welfare of the people in Minnesota.

CONQUEST OF TUBERCULOSIS

The conquest of tuberculosis in our country will be expedited by concentrating on those measures which have been most productive in the past decades. These are early case finding, prompt and adequate treatment, including the newer surgical procedures, and effective medical follow-up and rehabilitation of arrested cases. Vigorous efforts along these lines are absolutely essential not only for the welfare of those with the disease but also for the protection of those who might otherwise become infected. The detection and isolation of infectious cases are the most effective curbs to the spread of the disease.—Louis I. Dublin, "A 40-Year Campaign Against Tuberculosis," *Metropolitan Life Insurance Company,* 1952.

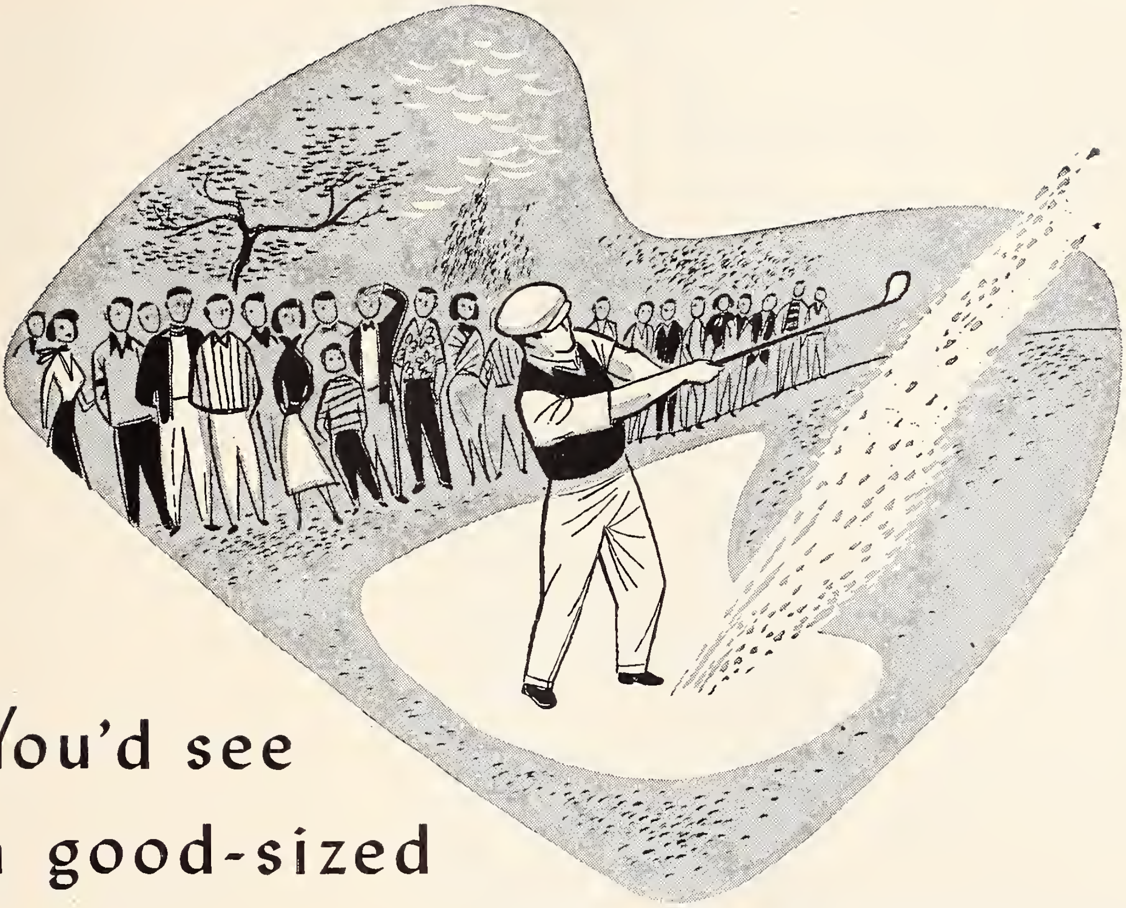


The Birches Sanitarium, Inc.

2391 Woodland Avenue
Duluth 3, Minnesota

A hospital for the care and treatment of Nervous and Mental disorders. Quiet, cheerful environment. Specially trained personnel. Recreational and occupational therapy.

Dr. L. R. Gowan, M.D., M.S., Medical Director



You'd see a good-sized gallery

. . . with all the patients who represent the 44 uses for short-acting

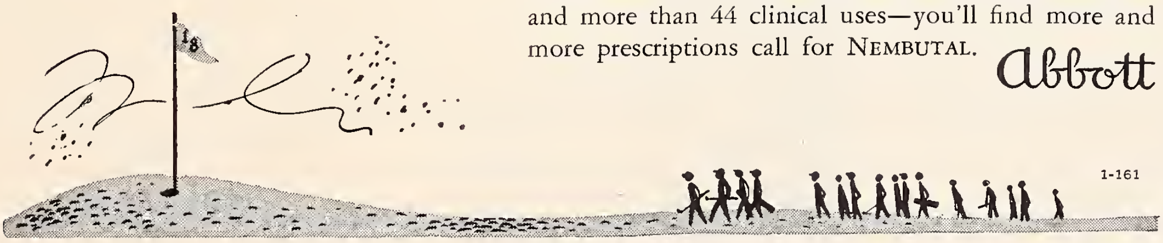
Nembutal®

WHAT YARDSTICK DO YOU USE TO DETERMINE the drug you write on your prescription? If the drug is a barbiturate—such as short-acting NEMBUTAL (Pentobarbital, Abbott)—you can measure it, compare it and sum it up in these four short sentences:

1. *Short-acting* NEMBUTAL *can produce any desired degree of cerebral depression—from mild sedation to deep hypnosis.*
2. *The dosage you need is small—only about half that of many other barbiturates.*
3. *There's less drug to be inactivated, shorter duration of effect, wide margin of safety and usually no morning-after hangover.*
4. *In equal oral doses, no other barbiturate combines quicker, briefer, more profound effect.*

Perhaps that's why—after 23 years, 598 published reports and more than 44 clinical uses—you'll find more and more prescriptions call for NEMBUTAL.

Abbott



1-161

In Memoriam

OLIVER R. BRYANT

Dr. Oliver R. Bryant, Minneapolis, died on his way from Inglewood, California, to his summer home at Cross Lake, on May 18, 1953. He was seventy-three years old.

Dr. Bryant was born December 1, 1879, in Rochester, Minnesota. He obtained his M.D. degree from the University of Minnesota in 1905.

He was in private practice in Minneapolis for twenty-five years and was chief medical officer of the Minnesota Soldiers Home for ten years. He was also on the staff of the Anoka State Hospital for five years.

Dr. Bryant was a Mason. He served with the 5th Minnesota Regiment in the Spanish American War and was a member of the Arthur MacArthur Post of Spanish War Veterans. He was an active sportsman and participated in fund-raising ventures to provide grain for the wildlife during the winter. He was a member of the Hennepin County Medical Society, the Minnesota State Medical Association and the American Medical Association.

Dr. Bryant is survived by his wife, Hazel, and a son, John R., of Dallas, Texas.

J. E. CORRIGAN

Dr. J. E. Corrigan, a former pioneer physician and surgeon at Spooner, Minnesota, died March 30, 1953, at the home of his son Jack, at Excelsior, Minnesota. He was about eighty-six years old.

Dr. Corrigan was a graduate of the New York University Medical School in 1892.

After living in Spooner a number of years, Dr. Corrigan built a hospital (now the Pioneer Home) and carried on an active practice until he moved to Minneapolis about fifteen years ago and retired from practice.

Dr. Corrigan was a member of the Upper Mississippi Valley Medical Society, the Minnesota State Medical Association and the American Medical Association. He became a life member of the Minnesota State Medical Association in 1938.

WILLIAM FREDERICK CARL HEISE

Dr. W. F. C. Heise, founder of the Heise Clinic in Winona, died on May 29, 1953, at his home after an illness of several weeks.

Dr. Heise was born in Fountain City, Wisconsin, October 1, 1874. His long career witnessed and took part in the development of modern medicine and surgery. Graduating from Rush Medical College, Chicago, in 1896, he spent two years as an intern at the Presbyterian Hospital in Chicago. After practicing a short period in a small iron mining town in Michigan, he moved to Winona in 1898.

Dr. Heise had his five sons associated with him in his clinic. His oldest son, Herbert, is a graduate of Jefferson Medical College and specializes in surgery; William, a graduate of Northwestern, is a pediatrician; Philip, a graduate from the University of Arkansas, specializes in obstetrics and gynecology; Paul, a graduate from Marquette, is both surgeon and pathologist; Carl, a graduate of Jefferson, takes care of ear, nose and throat diseases. A portrait of the family hangs in the library of the American College of Surgeons in Chicago in view of the unique group of a family of six practicing together. Of further interest is the fact that Dr. Heise's brother, Dr. Carl A. Heise of Missouri Valley, Iowa, has two sons and two daughters who are physicians and one daughter who is a nurse.

Dr. Heise was a member of the Winona County Medical Society, the Minnesota State Medical Association, and the American Medical Association. He was a fellow of the American College of Surgeons.

He is survived by his widow, five sons, three daughters: Mrs. John Curtis of Winona and the Misses Ruth and Adele Heise, both teachers in Minneapolis.

GALEN K. SELLERS

Dr. Galen K. Sellers, Dassel, Minnesota, who had practiced medicine there since 1937, suddenly died of a coronary thrombosis on April 18, 1953. He was fifty-six years of age at the time of his death. Dr. Sellers was born in Bangor, Maine, on May 15, 1896, a son of the late Dr. and Mrs. Harry H. Sellers. In 1914 the Sellers family moved to Minneapolis, Minnesota.

He received his early education in Bangor, Maine, and in 1916 was graduated from the Shattuck Military Academy in Faribault, Minnesota. He served with the Armed Forces during World War I after which he began his pre-medical studies at the University of Minnesota and at the University of North Dakota. He received his medical degree from the University of Illinois in 1928 and served a year of internship at the Swedish Hospital in Minneapolis, completing his internship in 1929. From 1929 to 1931 he practiced medicine at Deer River, Minnesota, and from 1931 to 1937 at Motley, Minnesota. Since 1937 he had practiced medicine at Dassel, Minnesota, and at the time of his death was Chief of Staff at the Meeker County Memorial Hospital in Litchfield, Minnesota.

Dr. Sellers was a member of the Kandiyohi, Swift, Meeker County Medical Society, the Minnesota State Medical Association, and the American Medical Association. He was a member of the American Legion and was always interested and active in local affairs.

Survivors include his wife, Ada L. Sellers, and two sons, Galen and Robert, of Dassel, and a sister, Mrs. Burrell Laraway of Minneapolis, Minnesota.

Dr. Sellers was an able and conscientious doctor and was always a credit to the medical profession. He had a likeable and pleasant personality and will be sadly missed by all who knew him.

(Continued on Page 652)

Cordelia

AWARD WINNING BRASSIERES!

Cordelia surgical brassieres have won the Blue Ribbon for five consecutive years. Now, Cordelia has won BOTH the GOLD MEDAL and BLUE RIBBON AWARDS at the 1952 California State Fair Fashion Exhibit.

Accepted For Advertising In Publications Of The American Medical Association

When she asks...

HERE ARE THE FACTS!

Most corrective, surgical and maternity brassiere problems have been scientifically solved by the staff of Physiospecialists at Cordelia of Hollywood.

THE GOLD MEDAL WINNER!

Each Cordelia brassiere is planned and made for easy, individual fittings by experts in local stores.

THE BLUE RIBBON WINNER!

Every Cordelia brassiere is a luxury in fashion fabrics — beautifully, youthfully designed. These are the facts judges took into consideration — then awarded *Cordelia the winner!*

Prescribe

Cordelia®

OF HOLLYWOOD BRASSIERES

3107 Beverly Blvd.
Los Angeles 57,
Calif.
DUnkirk 3-1365

California's leading creator and manufacturer of scientifically designed surgical, corrective, maternity and style brassieres.

Originators of the famous "Control-Lift" design

"Control Lift" Brassieres Available at These Stores

Duluth — The Silhouette Shop, c/o Albenberg's

Elk River—Barsness Variety

Hibbing—Corbett Corset Shop

Lamberton—Kluegel Dry Goods Dept.

Mankato—L. Salet & Son

Minneapolis—
Angela's St. Louis Pk.
The Dayton Co.
Katherine K Corset Shop
Shirley's Maternity Fashions

Rochester—
C. F. Massey Co.
Peggy's Uniform Shop

Saint Paul—
The Golden Rule

Virginia—Jarmin's, Inc.

(Continued from Page 650)

ROBERT F. WERNER

Dr. Robert F. Werner, formerly of International Falls, died in Los Angeles, California, April 29, 1953. He practiced in Nevada City, California, from 1927 to 1932, in International Falls from 1933 to 1941, and in Minneapolis in 1942 before moving to California.

Dr. Werner was born at Center City, Minnesota, and graduated from the University of Minnesota Medical School in 1921.

Surviving are his wife, Elizabeth, and a son Robert, both of St. Paul.

WILLIAM FRANKLIN WILSON

Dr. William F. Wilson, a practitioner at Lake City, Minnesota, since 1893, died suddenly of a heart attack on May 29, 1953. He was eighty-eight years old.

Dr. Wilson was born in Jamaica, West Indies, October 5, 1864. He attended the medical department of Northwestern University, where he graduated in 1897. He took further study at Chicago Post Graduate School in 1899 and at New York Post Graduate in 1901. He acted as resident physician at the Minnesota School and Hospital for the Feeble Minded at Faribault from 1901 to 1904.

Dr. Wilson was secretary of the Wabasha County Medical Society continuously from 1896 until his death, except for one year when he served as president of the Society. He was automatically a member of the Minnesota State Medical Association and the American Medical Association.

Dr. Wilson served as a member of the United States Board of Pension Examiners. He was president of the Public Library Board from 1906 for many years.

Dr. Wilson is survived by a son, Arthur.

Tuberculosis is characteristically slow and insidious in its onset. A disease which has early and dramatic symptoms and makes its victims seek medical advice at once does not present the same difficulties of control as does a disease like tuberculosis. Robert J. Anderson, M.D., *Medical Papers of the Annual Meeting of the Canadian Tuberculosis Association,* May, 1951.

©

STOP . . .

BEFORE YOU BUY YOUR NEW CAR— SEE US . . .

we can save you money on the finance charge.

AMERICAN NATIONAL BANK
OF SAINT PAUL

Bremer Arcade **Robert at 7th** **CE 6666**

Member Federal Deposit Insurance Corporation

ACCIDENT • HOSPITAL • SICKNESS

INSURANCE

For Physicians, Surgeons, Dentists Exclusively

ALL PREMIUMS COME FROM PHYSICIANS SURGEONS DENTISTS ALL CLAIMS GO TO

$5,000 accidental death Quarterly $8.00 **$25 weekly indemnity, accident and sickness**	**$15,000 accidental death Quarterly $24.00** **$75 weekly indemnity, accident and sickness**
$10,000 accidental death Quarterly $16.00 **$50 weekly indemnity, accident and sickness**	**$20,000 accidental death Quarterly $32.00** **$100 weekly indemnity, accident and sickness**

COST HAS NEVER EXCEEDED AMOUNTS SHOWN

ALSO HOSPITAL INSURANCE

	Single	Double	Triple	Quadruple
60 days in Hospital	5.00 per day	10.00 per day	15.00 per day	20.00 per day
30 days of Nurse at Home	5.00 per day	10.00 per day	15.00 per day	20.00 per day
Laboratory Fees in Hospital	5.00	10.00	15.00	20.00
Operating Room in Hospital	10.00	20.00	30.00	40.00
Anesthetic in Hospital	10.00	20.00	30.00	40.00
X-Ray in Hospital	10.00	20.00	30.00	40.00
Medicines in Hospital	10.00	20.00	30.00	40.00
Ambulance to or from Hospital	10.00	20.00	30.00	40.00
COSTS (Quarterly)				
Adult	2.50	5.00	7.50	10.00
Child to age 19	1.50	3.00	4.50	6.00
Child over age 19	2.50	5.00	7.50	10.00

$4,000,000.00
INVESTED ASSETS

PHYSICIANS CASUALTY ASSOCIATION
PHYSICIANS HEALTH ASSOCIATION
51 years under the same management
400 First National Bank Building
Omaha 2, Nebraska

$19,500,000.00
PAID FOR CLAIMS

$200,000.00 deposited with State of Nebraska for protection of our members

YOU, TOO, HAVE A PLACE
In the World Medical Associaion

As a Member of the Medical Profession Anywhere in the World

Civilian . . . In the Armed Forces . . . Retired

You will benefit from:

1. *Joining 700,000 doctors from 43 nations* in a worldwide movement to help you attain the highest possible level of medical practice and scientific advance.
2. *Reports obtainable only in the World Medical Association Bulletin* which is issued to you quarterly and contains facts on scientific, economic and social trends affecting the practice of medicine.
3. *Letters of introduction to foreign medical associations,* facilitating your professional contacts and exchange of ideas while traveling abroad.
4. *Representation before the World Health Organization,* UNESCO, the International Labor Organization, and other important bodies in order to maintain the honor and defend the international interests of your profession when these organizations discuss measures concerning medical practice.
5. *The satisfaction of sharing the progress of American* medicine with other lands and thus repaying them for the inspiration we have received from them.

What Affects World Medicine—Affects You. This is your ONLY Voice in World Medicine.

W.M.A. Is Approved by the American Medical Association. *Join Now!*

Dr. Louis H. Bauer, Secretary-Treasurer
U. S. Committee, Inc., World Medical Association
2 East 103rd Street, New York 29, New York

I desire to become an individual member of the World Medical Association, United States Committee, Inc., and enclose check for $.........................., my subscription as a:

..............................Member—$10 a year

..............................Life Member—$500.00 (No further assessments)

..............................Sponsoring Member—$100.00 or more per year

Signature ....

Address ....

....

(Contributions are deductible for income tax purposes)

Of General Interest

Dr. J. Arthur Myers, professor of medicine and public health at the University of Minnesota, was the principal speaker at the Lyon County accreditation program, held April 20, in Marshall. To earn tuberculosis accreditation, Lyon County has met the two requirements—a low tuberculosis death rate, average of less than ten per 100,000 population annually for five years, and a low infection rate which is "sampled" by tuberculin testing all high school seniors in the county.

Dr. S. A. Slater, of Worthington, gave a report on Lyon County's recent tuberculin testing survey and presented the control accreditation certificate. **Dr. Kathleen A. Jordan,** of Granite Falls Riverside Sanatorium, presented certificates to the schools. **Dr. W. H. Valentine,** of Tracy, president of the Lyon County Tuberculosis and Health Association, was master of ceremonies.

* * *

Dr. John W. Gridley, of Arlington, was in charge of the program of the Arlington Parent Teachers' Association meeting, held April 20, in the high school auditorium. The program accented the health of the school child.

* * *

Dr. Clarence Paul Winchell, of the Heart Hospital, University of Minnesota Hospitals, presented case histories on heart disease in a speech to members of the Wright County Medical Society at their second clinical conference on cancer and heart disease, held in Howard Lake, April 14.

* * *

Drs. R. F. Pierson, D. Nywall, and **J. L. Bader,** of Slayton, attended the meeting of the Southwestern Minnesota Medical Society, held April 13 at Worthington.

* * *

The first in a series of eight lectures of a regional postgraduate seminar course, arranged for by the University of Minnesota, and sponsored by the Brown County Medical Society, was held April 7 at the Union Hospital in New Ulm. **Dr. Donald R. Lannin,** of Saint Paul, addressed the group on "Fractures in Children." **Dr. Lyle A. French,** of Minneapolis, gave the second lecture, April 14, "Head Injuries and Nerve Injuries." **Dr. O. B. Fesenmaier,** of New Ulm, is the local chairman of the course.

* * *

Dr. C. F. Cervenka, of New Prague, attended the annual meeting of the American Association of Railway Surgeons, held in Chicago the week of April 6.

* * *

Dr. Leong Hom, of Battle Lake, spoke at a public meeting on cancer sponsored by the Underwood Study Club, in the high school auditorium, April 16. The movie, "Breast Self-Examination," was also shown.

Dr. Edgar R. Sather, Alexandria, and **Dr. Edwin E. Emerson,** of Osakis, assisted in the Douglas County immunization program, sponsored by the county nurse, schools, and physicians, in April.

* * *

Dr. Joseph Buckley, of the Department of Anesthesiology, University of Minnesota, talked on anesthesia from a general standpoint, to the members of the Red River Valley Medical Society at their annual spring meeting held at Thief River Falls, April 21.

* * *

Dr. W. F. Mercil, of Crookston, attended the spring meeting of the State Obstetrics and Gynecology Society, held in Duluth, April 25.

* * *

Honored at the annual dinner of the American College of Physicians in Atlantic City, April 16, was **Dr. Howard A. Rusk,** New York, N. Y., winner of the Mutual of Omaha Dr. C. C. Criss Award. The award, a gold medal and a $10,000 honorarium, is presented annually as a memorial to the late Dr. C. C. Criss, founder of Mutual of Omaha. Dr. Rusk was chosen for the Criss Award from a field of 150 nominees by a board of judges, headed by **Dr. Charles W. Mayo,** of Rochester.

Dr. Edward C. Kendall and **Dr. Phillip S. Hench,** of Rochester, were winners of the 1951 Criss Award for their work with Cortisone.

The Criss Award is presented annually to the individual or individuals who have made outstanding accomplishments in the field of health or safety.

* * *

The first in a series of Family Doctors' Days was held April 29, at the University of Minnesota. The Family Doctors' Day series is sponsored in an effort to bring about a closer relationship between the medical faculty and physicians in active practice in the state, **Dr. Robert B. Howard,** director of medical education at the University, said. The program for the first session included **Dr. Wesley W. Spink,** professor of medicine, speaking on "Antibiotics in Medical Practice," and **Dr. C. J. Watson,** head of the department of medicine, on "Case Presentation." The program closed with a clinical-pathological conference staged by Dr. Watson and his staff.

* * *

Dr. Jack Delmore, of Roseau, president of the Red River Valley Medical Society, conducted the annual spring meeting of the society, April 21, at Thief River Falls.

* * *

Dr. G. K. Stillwell, of the University of Minnesota physiotherapy department, was guest speaker at the annual meeting of the Duluth Health Council, held April 21, in St. Luke's Hospital auditorium.

After All, You've Earned It

And now that you've earned it, what are you going to do with it?
(It's your money we are referring to)

First, of course, Operating Expenses must be paid . . .
Then Income Taxes . . .
Then Living Expenses . . .
Whatever remains is your Net Income, available for:
Insurance . . . Retirement . . . Savings . . . Investments . . . etc.

Your net income, wisely invested, works for you, also earns an income. What happens to this income?

Operating Expenses have already been paid . . .
So have Living Expenses . . .
Income Taxes, however, are something else . . .

If Your "Wisely-Invested" Funds Are Invested in Municipal Bonds the Income Is Exempt from All Present Federal Income Taxes.

Remember, an 8% taxable income, after taxes are paid, may be no more "net" income for you than a 3% tax-exempt income.

We can offer Municipal Bonds with yields of 4% or more.

Write for descriptive circulars

JURAN & MOODY
MUNICIPAL SECURITIES EXCLUSIVELY

TELEPHONES:
GArfield 9661
PRior 6423

93 E. SIXTH STREET
ST. PAUL 1, MINNESOTA

Dr. Mario Fischer, city health officer, led a panel discussion on rehabilitation.

* * *

Dr. E. G. Olmanson, and **Dr. M. E. Lenander,** of St. Peter, were re-named to the hospital commission, at the organizational meeting of the St. Peter city council, April 14.

* * *

Dr. Robert Pederson and **Dr. W. E. Macklin,** of Willmar, diplomates of the American Board of Radiology, began regular hours in Redwood Falls Hospital, April 22.

* * *

Dr. H. B. Christianson, medical director of Parkland Sanatorium, Superior, Wisconsin, has resigned, effective June 30. Dr. Christianson will begin a fellowship at the Mayo Clinic and Foundation, July 1.

* * *

Dr. A. J. Lenarz, of Browerville, attended the medical staff meeting held at St. Michael's Hospital, Sauk Centre, April 14.

* * *

Dr. F. H. Ellis, Jr., a Mayo Clinic fellow, joined the Nopeming Sanatorium staff for three months, in April.

* * *

Dr. L. C. Kolb, consultant in psychiatry at the Mayo Clinic, was the guest speaker at an achievement program held, April 7, at the Rochester State Hospital. Seventeen psychiatric aides received

HOMEWOOD HOSPITAL is one of the Northwest's outstanding hospitals for the treatment of Nervous Disorders—equipped with all the essentials for rendering high-grade service to patient and physician.

Operated in Connection with Glenwood Hills Hospitals

HOMEWOOD HOSPITAL
Corner Penn and Plymouth Avenues North
Minneapolis Minnesota

awards and certificates in recognition of at least two years of required experience in the Minnesota psychiatric aide program. **Dr. Conrad W. Baars,** director of education at the hospital, was master of ceremonies. **Dr. Magnus C. Petersen,** hospital superintendent, gave the welcome and presented the recognition awards.

* * *

Dr. W. H. Valentine, of Tracy, attended a Railroad Surgeon's meeting in Chicago, April 9.

* * *

Dr. A. W. Jones, of Red Wing, celebrated his ninetieth birthday, April 12. Dr. Jones retired two years ago after practicing for more than half a century, most of the time in Red Wing.

* * *

Dr. Haddon Carryer, of Rochester, was the guest speaker at the Austin Nurses Club meeting, held April 8 at St. Olaf Hospital. Dr. Carryer spoke on the many modern aspects of treating disease.

* * *

Dr. Charles Schiefley, former Browns Valley resident, now at the Mayo Clinic, stopped to visit in Browns Valley on his way to Aberdeen to speak before a medical meeting. Dr. Schiefley, who pilots his own plane, was accompanied by his son, Stevie.

* * *

Dr. A. L. Ourada, of Ceylon, was named county health officer by the Fairmont County commissioners. Dr. Ourada succeeds **Dr. R. S. Hunt** of Fairmont.

* * *

Dr. C. A. Anderson, of Hector, attended the meeting of the American Academy of General Practice, held in St. Louis, Missouri, the last week in March.

* * *

Dr. Robert W. Toon, of Minneapolis, was married to Joan Marie Harvey, Minneapolis, May 2. Dr. Toon received his medical degree from the University of Oregon, and recently completed a five-year residency in surgery at the University of Minnesota hospitals. The bride is a student of nursing education at the University of Minnesota.

* * *

Dr. David Bodian, of Johns Hopkins, and Dr. Ralph S. Paffenberger, Jr., of the U. S. Public Health Service, in presenting a study on polio at the American Society of Immunologists meeting in Chicago, April 10, paid tribute to Mayo Clinic physicians, **Dr. Lyle A. Weed, Dr. Thomas B. Magath,** and **Dr. Louis A. Buie,** for their work in polio research.

* * *

Dr. Arthur H. Wells, of Duluth, was awarded the American Cancer Society's medal for Minnesota's 1953 "Man of the Year" in cancer control. The award is presented every year to the outstanding cancer control physician in each state throughout the country in conjunction with the American Cancer Society's annual fund-raising campaign.

Dr. Wells has been a member of the board of directors, Duluth district, American Cancer Society, and has served on the Minnesota Division's board of directors for the last eight years. He was president of the Minnesota division from 1948 to 1952, and currently is a member of the state executive committee. He served on the national cancer organization's board of directors in 1949, and presently is chairman of the cancer committee of the Minnesota State Medical Society.

* * *

Dr. Josiah Fuller, of Rochester, spoke on chest surgery to the members of the Minnesota Nurses Association, Private Duty Section of Second District, April 15, at the meeting held at St. Mary's Hospital in Duluth.

* * *

The Minnesota Academy of Ophthalmology and Otolaryngology met at Rochester April 10. **Dr. Kenneth Phelps,** of Minneapolis, president, presided. **Dr. T. G. Martens** was in charge of the scientific program and **Dr. Robert W. Hollenhorst,** chairman of the academy's council, was in general charge of the meeting. Four Rochester physicians to present papers were **Dr. John W. Pender, Dr. Kenneth Devine, Dr. H. L. Blair** and **Dr. John Lillie.**

* * *

Dr. Robert W. Goltz and **Dr. Melvin L. Grais,** of Minneapolis, began an associated practice of dermatology at 1021 Medical Arts Building, Minneapolis, in April. Dr. Grais is leaving soon for military service and Dr. Goltz will carry on their joint practice.

(Continued on Page 658)

North Shore Health Resort

Winnetka, Illinois

on the Shores of Lake Michigan

A completely equipped sanitarium for the care of nervous and mental disorders, alcoholism and drug addiction offering all forms of treatment, including electric shock.

SAMUEL LIEBMAN, M.S., M.D.
225 Sheridan Road Medical Director Phone Winnetka 6-0211

It had to be good to get where it is

DRINK
Coca-Cola
REG. U. S. PAT. OFF.

THE COCA-COLA COMPANY

(Continued from Page 656)

Dr. C. E. Norberg, of Cloquet, the city health officer, endorsed the 1953 American Cancer Crusade which opened in Cloquet, April 6.

* * *

Dr. William F. Braasch, of Rochester, was named national chairman for the 1953 campaign of the University of Minnesota's Greater University Fund. Dr. Braasch received his Bachelor of Science degree from the University in 1900 and his medical degree in 1903. He served as director of the General Alumni Association for twenty-two years and as its president from 1928 to 1930. He retired in 1947 from the Mayo Clinic staff. In 1951 the University presented its outstanding achievement award to Dr. Braasch for his accomplishments in teaching and research in the field of urology.

* * *

Services for Mrs. Geneve R. Kistler, wife of **Dr. Alvin J. Kistler**, of Minneapolis, were held April 18, at the Lakewood Cemetery Chapel. Mrs. Kistler was a member of the Hennepin County Medical Society Auxiliary, the board of the Jones-Harrison Home, and the Auxiliary of the International College of Surgeons.

* * *

Dr. Edward F. Gray, of Saint Paul, began practice in White Bear in April, with his office in the Martin Building, 698 Third Street. Dr. Gray received his medical degree from Marquette University and interned at the City Hospital in Detroit. He served in the navy for three and a half years during World War II.

* * *

Dr. Rose Vallely, of San Francisco, California, returned to Lake Minnetonka to live, in April. Dr. Vallely practiced medicine in Minneapolis for over forty years before going to the West Coast.

* * *

Dr. P. A. O'Leary, of the Mayo Clinic, attended a meeting of the chief editors of the American Medical Association, held in Chicago, April 18.

* * *

Dr. L. J. Kennedy and **Dr. E. C. Burke**, of the Mayo Clinic, attended the area meeting of the American Academy of Pediatrics in Boston, the week of April 13. Dr. Kennedy is president-elect of the academy.

* * *

According to the report of The Council on Medical Education and Hospitals of the American Medical Association which appeared in the May 9 issue of *The Journal of the American Medical Association*, admissions to hospitals in 1952 totaled 18,914,847 compared with 18,237,118 in 1951. The bed capacity showed an increase of 11,627 over 1951. The average length of stay of individual patients in governmental general hospitals was more than twice as long as non-governmental general hospitals—16.4 days as compared with 7.4 days.

* * *

Some $7,500 worth of new medical books destined for medical schools in Korea are part of the over-all

Dilaudid hydrochloride
(dihydromorphinone hydrochloride)

COUNCIL ACCEPTED

100 oral TABLETS
Dilaudid
hydrochloride
BILHUBER-KNOLL CORP.
Dilaudid 1/20 gr.
Dilaudid
hydrochloride

Powerful opiate analgesic - dose, 1/32 grain to 1/20 grain.

Potent cough sedative - dose, 1/128 grain to 1/64 grain.

Readily soluble, quick acting.

Side effects, such as nausea and constipation, seem less likely to occur.

An opiate, has addictive properties.

Dependable for relief of pain and cough, not administered for hypnosis.

● Dilaudid is subject to Federal narcotic regulations. Dilaudid, Trade Mark Bilhuber.

Bilhuber-Knoll Corp. Orange, N. J.

THE SHELTERING ARMS

4330 River Road, Minneapolis 6, Minnesota

A HOSPITAL FOR TREATMENT OF POLIOMYELITIS

Acute and Convalescent

Fully Approved by American College of Surgeons
Modern treatment—Staff includes Kenny trained technicians

total of $200,000 worth of textbooks which will be sent to Korea by the United Nations Korean Reconstruction Agency through CARE. Ninety per cent of the medical books will be American and the balance English, French, and German.

* * *

Dr. Wesley W. Spink, professor of medicine at the University of Minnesota, presented one of the first patients (Mrs. Ralph Bearman, 3819 Abbott Avenue So., Minneapolis) to be successfully treated with penicillin, to Sir Alexander Fleming of England, discoverer of penicillin, May 12. Dr. Fleming was in Saint Paul for the St. Joseph's Hospital centennial celebration.

* * *

Dr. Edgar D. Brown, formerly of Paynesville, celebrated his eighty-fourth birthday April 11, in St. Petersburg, Florida. Among the guests were many of Dr. Brown's former students from the University of Minnesota Medical School where he taught from 1907 to 1937.

* * *

Two Grand Rapids doctors—**Dr. J. A. Bolz** and **Dr. C. R. Ferrell**—left April 21, for at least two years of duty with the army medical corps. They reported to Fort Sam Houston, Texas, for training.

* * *

Dr. Ivan Baronofsky, assistant professor of surgery at the University of Minnesota Medical School, spoke on cancer at the fifth physicians' seminar session, held April 28, at the Atlantic Hotel at Marshall.

Dr. A. R. Reff, of Crookston, served as a member of the Polk County Mental Health Committee during National Mental Health Week, May 3 through May 9. The Committee served as volunteer speakers on mental health before groups in the community requesting speakers.

* * *

Dr. L. B. Moyer, of Belgrade, conducted the medical examinations for the pre-school clinic held April 28 in school district No. 215.

* * *

Dr. Albert G. Miller has become associated with **Drs. Edward L. Strem** and **Sheldon C. Siegel** in the practice of Pediatrics and Pediatric Allergy, with offices at 711 Lowry Medical Arts Building, Saint Paul.

* * *

Dr. Clyde Undine, of Minneapolis, was among those who attended the recent meeting of The American College of Physicians, held at Atlantic City, April 13 to 17, 1953.

* * *

Dr. John W. Schumacher, of Minneapolis, was guest speaker at the Calvary Lutheran Brotherhood fellowship supper, held April 21, at the Calvary Lutheran Church, Golden Valley. Dr. Schumacher spoke on "Psychiatry and Religion" and afterwards, together with Reverend Fredrick Norstad, conducted an introductory panel which was followed by an open forum.

Dr. Schumacher, a graduate of the University of

HELP FOR
PROBLEM DRINKERS

Hazelden Foundation (non-profit) is dedicated to the treatment of problem drinking through research, education, and rehabilitation. It has ideal facilities on Lake Chisago near Center City, Minn. Your inspection is invited at any time.

HAZELDEN FOUNDATION

Let us send you complete information

A NON-PROFIT ORGANIZATION

2639 University Avenue
24-hour service

St. Paul 14, Minnesota
Phone NEstor 5958

BROWN & DAY INC SAINT PAUL USA
SERVICE QUALITY

For

Professional Supplies

and

Service

BROWN & DAY, INC.

St. Paul 1, Minnesota

Minnesota Medical School, has done postgraduate work in psychiatry and is now on the staff of the Minnesota Psychiatric Institute.

* * *

Dr. G. J. Germann, of New Ulm, was named chairman of the Cancer Drive which was conducted in the city the week of May 4.

* * *

Dr. Fredolph H. Magney, of Duluth, was reappointed for a second term to the board of medical examiners. The new term expired May 1, 1953.

* * *

Dr. Ludolf J. Hoyer, of Windom, has recently had the office and storage space of the Windom Clinic enlarged.

* * *

Dr. Fred W. Wittich, of Minneapolis, as president of the International Association of Allergy, opened the second European Congress on allergy held in Copenhagen, Denmark, May 20. He also attended and spoke at meetings of the French Allergy Society in Paris, and the Netherlands Society of Allergy in Utrecht. Dr. Wittich has been made a life-time honorary fellow of the Netherlands Society of Allergy.

* * *

Dr. D. E. Stewart, of Crookston, addressed the Rotary Club on recent advances in chest surgery at the noon meeting held April 23. Dr. Stewart was introduced by the program chairman, **Dr. C. G. Uhley** of Crookston.

* * *

Doctors from eight counties attended the meeting of the Upper Mississippi Medical Society and the Stearns-Benton Medical Society at a joint meeting held April 25, in Pine Edge Inn at Little Falls. **Dr. A. M. Watson,** of Royalton, was chairman in charge of the meeting; **Dr. W. Hill,** of Bertha, presided.

Dr. Earl Kanne, of Brainerd, gave a talk on psychiartic problems in general practice which was followed by a round-table surgical discussion led by **Dr. Maynard Nelson, Dr. Earl Hendrickson** and **Dr. Daniel Moos,** of Minneaoplis.

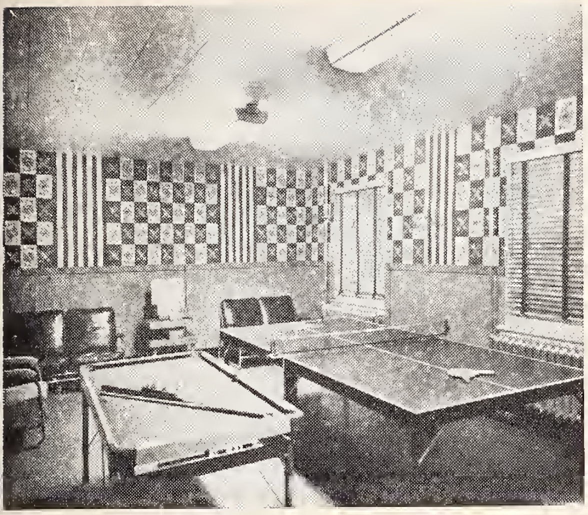
Dr. Joseph B. Gaida, St. Cloud, president of the Stearns-Benton Medical Society, and a member of the Board of Directors of the University of Minnesota School Alumni Association, spoke on the new Medical Alumni Directory which is being compiled and will list all doctors who have graduated from the University since the beginning of the medical school.

* * *

Dr. C. H. Coombs, Health Officer for Cass Lake; **Dr. M. Nordlund,** and **Dr. Sidney Finkelstein,** of the United States Indian Service, assisted at the annual immunization school clinic for the Cass Lake Public Schools, April 28.

* * *

An appreciation dinner honoring **Dr. C. S. Donaldson's** twenty-six years of service to the community, was held April 30 in Foley. Dr. Donaldson, who had practiced continuously from 1926 to 1953 in Foley, left to begin a partnership with **Dr. W. B. Richards** at the Richards Clinic in St. Cloud.



Recreation Room

Saint Paul's Exclusive

CRESTVIEW

NEUROPSYCHIATRIC

HOSPITAL

New . . Modern . . Complete . .

Providing the highest standard of service at the lowest cost.

- **Occupational therapy and recreational department.**
- **Complete X-ray and laboratory.**
- **Electrocardiography—basal metabolism.**
- **Electroencephalography available.**
- **All patients rooms air-conditioned.**
- **Background music and psychotherapy sound equipment.**
- **Medically staffed by every neurologist and psychiatrist in Saint Paul.**
- **Especially trained nursing staff.**

MEMBER of the American Hospital Association
MEMBER of the Minnesota Hospital Association
APPROVED by the Minnesota State Medical Association and the Ramsey County Medical Society.

CRESTVIEW HOSPITAL • 145 W. College Ave., St. Paul
GArfield 5841

A non-profit organization

Dr. Frank H. Krusen, of the section on physical medicine and rehabilitation, Mayo Clinic, spoke at the central states regional conference of the American Public Welfare Association, held at the Saint Paul Hotel, Saint Paul, April 27.

* * *

Dr. John W. Gridley, Dr. R. H. Kath, and **Dr. Thomas P. Martin** assisted at the pre-school clinic held in the Arlington Public School, April 24.

* * *

Dr. R. Wynn Kearney, of Mankato, has been named to head the new hospitalization program of the Mankato Civil Defense organization.

* * *

Dr. Rudolph A. Beise, of Brainerd, Minnesota's representative, together with physicians from other states, seventy-five years old, honored by the medical societies of the United States and Latin America, named the five most important advances that he has witnessed—new immunization techniques, new drugs, identification of various disease germs, discovery of disease transmission by insects as in yellow fever and malaria, and blood and plasma transfusions. The three factors that have contributed most to medical progress in his lifetime, Dr. Beise said, are diphtheria antitoxin, insulin and antibiotics.

* * *

Dr. James Roger Fox, University of Minnesota Medical School, spoke at the annual "Health Day" program of the St. Louis County Medical Society Auxiliary, held in St. Luke's Hospital, Duluth, April 24. Dr. Fox appears on the "How's Your Health" television program under sponsorship of the University of Minnesota and the Minnesota State Medical Association.

* * *

Dr. John Stam, of Worthington, was appointed April 22 as part-time medical director of Public Health District 5, succeeding **Dr. Helen Wolff** who resigned some months ago.

* * *

Dr. Owen H. Wangensteen, professor and chairman of surgery in the University of Minnesota Medical School, spoke on "Scholarship" at the annual dinner of Nu Sigma Nu Medical Foundation (Epsilon Chapter), held in the Minnesota Club, April 18. **Dr. E. S. Platou**, of Minneapolis, director of a scholarship fund drive of the foundation, also spoke. **Dr. Vernon D. E. Smith**, of Saint Paul, was toastmaster.

Cornerstone of a $100,000 Nu Sigma Nu Chapter House and Medical Foundation of the fraternity was laid at Oak and River Drive, Minneapolis, April 18. Participating in the ceremonies were Dr. Smith, who heads the building fund committee; **Dr. William Hartfiel**, Saint Paul Alumni Association and member of the National Executive Council, and **Dr. C. Naumann McCloud, Jr.**, of Saint Paul, secretary.

* * *

Dr. F. J. Kucera, and **Dr. James A. Blake**, of Hopkins, attended the University of Minnesota Continuation Center Course in gastroenterology on April 27, 28, and 29.

* * *

Dr. A. D. Larson, who practiced in the Herman vicinity for many years, was recently honored on the occasion of his ninetieth birthday at his home in California.

* * *

Dr. Carl Caspers, of Minneapolis, was guest speaker at the Clay-Baker County Medical Society meeting, which was held May 2, at the Detroit Country Club, Detroit Lakes.

* * *

Dr. M. E. Odland, of Detroit Lakes, talked on polio at the meeting of the American Legion Auxiliary, held April 27.

* * *

Dr. Olaf Lukk, and **Dr. Robert L. Wilder,** of Minneapolis, were awarded prize ribbons in the annual Northwestern Hospital art show, held the week of April 27.

* * *

Dr. John W. LaBree, clinical assistant professor at the University of Minnesota, spoke on "Essential Hypertension" at the fourth session, April 21, of the Southwestern Minnesota professional persons' medical meetings being held weekly in Marshall.

* * *

Dr. R. L. Anderson, who has been living in Rockford, Illinois, for the past year and a half, returned to Willmar in April, and is now associated with **Dr. L. J. Opsahl.**

* * *

Dr. Robert S. Hunt, who has been associated with his father, **Dr. R. C. Hunt,** in practice in Fairmont since 1940, left in May to practice in Portland, Oregon.

* * *

The American Medical Association has just published a pamphlet "A Doctor for Your Community" which is intended primarily for communities seeking a physician. It describes briefly the problem involved in obtaining a doctor, the things a community can do to attract and keep a doctor and examples of what has been done in various communities throughout the country.

* * *

Dr. Peter Murray, a Negro physician of New York, who has been serving as a member of the AMA House of Delegates, is the new president-elect of the Medical Society of the County of New York. He will take office in 1954. It is a post that no other member of his race has held in a medical society in the United States. Dr. Murray is director of the Department of Gynecology at both Harlem and Mount Sinai Hospitals in New York City.

Dr. Gerald T. Evans, director of the course in medical technology at the University of Minnesota, served as toastmaster at the annual dinner sponsored by Orbs, the campus honorary society in the field of medical technology, which was held in the ballroom of Coffman Memorial Union, May 14. **Dr. Wesley M. Spink,** professor of medicine, University of Minnesota, and **Dr. E. M. Brown,** medical technology faculty, were guest speakers.

* * *

The Epsilon Chapter of Alpha Epsilon Iota, natonal medical sorority, was host to 153 women, licensed to practice medicine and living in Minnesota, at a buffet supper in the Hotel Saint Paul, May 17, to celebrate the 100th anniversary of the Minnesota State Medical Association. **Dr. Lillian Mayer Fink,** of Minneapolis, was general chairman. Other committee heads were **Dr. Eva Jane Ostergren Larson** and **Dr. Cherry Cedarleaf,** of Saint Paul; **Dr. Emma Nickelsen Fronk, Dr. Helen Knudsen, Dr. Eleanor Iverson Gunlaugson, Dr. Olga Hansen Litzenberg,** and **Dr. Catherine Corson West,** all of Minneapolis.

* * *

Dr. S. Steven Barron, of Minneapolis, recently became engaged to Miss Lynn Keldan, of Chicago. Dr. Barron was graduated from the University of Minnesota Medical School and is now a member of the clinical faculty.

* * *

Dr. Paul Heise, of Winona, spoke to the members of St. John's Parent Teachers' Association on "Children's Diseases," at the meeting held May 8.

Dr. Heise is a staff member of the Heise Clinic of Winona which was featured in an article by Irving Wallace in the May edition of *Better Homes and Gardens.*

* * *

Dr. Carl Bretzke, a graduate of the University of Minnesota Medical School, will join the Klefstad Clinic at Greenbush, July 15.

* * *

Dr. Gordon R. Kamman, of Saint Paul, spoke to the members of the Women's Auxiliary of the Minnesota State Medical Association, at a luncheon held in Saint Paul, May 19, during the 100th Anniversary Convention of the Medical Association.

* * *

Dr. George Earl, of Saint Paul, was one of seven alumni of the University of Minnesota to receive an outstanding achievement award on May 22, 1953, at the hands of President Morrill. Dr. Earl is chief of staff of the Midway Hospital, Saint Paul. He is also the head of the Earl Clinic, Saint Paul, and one of the delegates to the American Medical Association House of Delegates. He has been for a

DANIELSON MEDICAL ARTS PHARMACY, INC.

PHONES:
ATLANTIC 3317
ATLANTIC 3318

10-14 Arcade, Medical Arts Building
825 Nicollet Avenue—Two Entrances—78 South Ninth Street
MINNEAPOLIS

HOURS:
WEEK DAYS—8 to 7
SUN. AND HOL.—10 TO 1

number of years an associate editor of MINNESOTA MEDICINE and chairman of the Committee on Medical Economics of the Minnesota State Medical Association.

* * *

Dr. William B. Hildebrand, Menasha, Wisconsin, was chosen president-elect of the American Academy of General Practice at the annual meeting of the Academy, held in St. Louis in March. He has been secretary-treasurer of the Wisconsin Academy of General Practice since its inception and has just retired as president of the board of directors of the Academy.

* * *

At a meeting of the Blue Shield, held May 18, 1953, the following were re-elected to the Board of Directors: **Drs. O. I. Sohlberg,** Saint Paul, president; **R. R. Crammer,** Minneapolis, vice president; **C. A. McKinlay,** Minneapolis, secretary; and **E. C. Bayley,** Lake City, treasurer.

According to Arthur M. Calvin, executive director of the Minnesota Blue Shield, some 560,000 persons or one out of every six Minnesotans are now carrying medical insurance in the Minnesota organization. A total of $3,600,000 has been paid out in benefits to Blue Shield subscribers during the past five years.

* * *

Dr. J. H. Reinhardt, of Alexandria, left early in May for military duty with the Army Air Force. He reported to Guenther Air Force Base at Montgomery, Alabama, for training. During World War II, Dr. Reinhardt served with the army as a private, completing his medical education after his discharge from the army.

* * *

Dr. Byron Cochrane, of Saint Paul, was among those awarded useful citizen citations at the Macalester Alumni Association's annual meeting, held May 29, at Macalester College.

* * *

Dr. I. L. Oliver, of Graceville attended a short course in surgery, held at the University of Minnesota Center for Continuation Study, May 7, 8, and 9.

* * *

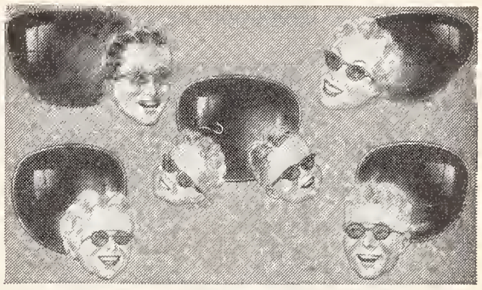
HOSPITAL NEWS

St. Joseph's Hospital in Brainerd opened its doors officially on April 20, 1953. It is one of the largest hospitals to have been built with federal assistance under the Hill-Burton Act, having a bed capacity of 129 beds and 24 bassinets.

The Hospital is operated by the Sisters of the Order of St. Benedict with Sister Adalbert, O.S.B., as superintendent. The new hospital replaces one which has been operated by the Benedictine Sisters of Brainerd for the last fifty-three years. The building is fireproof and its facilities are said to be as fine as those of any hospital of similar size in the country.

* * *

On Saturday and Sunday afternoon, May 9 and 10, 1953, the new wing of the *Charles T. Miller Hospital* in Saint Paul was open for inspection to contributors and friends of the hospital. The new wing has been named for Dr. Harry B. Zimmermann who has been



for every patient . . .

comfort *with certified*

PRESCRIPTION SUN GLASSES

Their eyes need the extra comfort that a pair of scientifically produced prescription sun glasses affords.

Summer or winter, you will extend your patients a service when you suggest an extra pair of glasses that will give them maximum glare protection without affecting true color values.

Your Benson Optical Supply House is well supplied to give you prompt and satisfactory service in this important item.

Benson OPTICAL COMPANY

EXECUTIVE OFFICES
MINNEAPOLIS, MINN.

SINCE 1913

COMPLETE LABORATORIES IN PRINCIPAL CITIES OF UPPER MIDWEST

AT YOUR CONVENIENCE, DOCTOR . . .

you are cordially invited to visit our new and modern prescription pharmacy located on the street floor of the Foshay Tower, 100 South Ninth Street.

With our expanded facilities we will be able to increase and extend the service we have been privileged to perform for the medical profession over the past years.

Exclusive Prescription Pharmacy

Biologicals Pharmaceuticals Dressings
Surgical Instruments Rubber Sundries

JOSEPH E. DAHL CO.

(Two Locations)
100 South Ninth Street, LaSalle Medical Bldg.
ATlantic 5445 Minneapolis

a member of the Board of Trustees of the hospital since its founding. This was a stipulation made by the late Louis A. Hill contingent on his contribution of $500,000 to the hospital.

As a result of the expenditure of $2,608,000 the new wing was built. This added eighty-seven new private rooms for patients, each with toilet facilities, air conditioning, oxygen, suction apparatus and communication system connecting patient and desk nurse. The addition furnishes new and spacious quarters for the laboratory and x-ray department, operating rooms, pharmacy and central supply department. The sixth floor has been extended and rebuilt for use as a psychiatric unit.

* * *

Dr. P. A. Mattison was elected chief of the *Winona General Hospital* for the coming year, at the May meeting of the medical staff. Dr. L. I. Younger was elected vice president; Dr. Philip Heise, secretary, and Dr. J. A. Tweedy, chairman of the executive committee.

* * *

Dedication ceremonies for the new million dollar *Bethesda Hospital* in Crookston were held Sunday, April 26. Featured speakers were Dr. Robert N. Barr, chief of special services, Minnesota Department of Health, and Dr. Helen Knudsen, also of the division of special services.

The new Bethesda Hospital with its seventy-seven-bed facilities, gives Crookston the maximum number of beds allowable by the Minnesota Department of Health. St. Francis Hospital, also comparatively new, has 140 beds.

* * *

The Yale University School of Medicine has obtained a grant of $2,500,000 from the Commonwealth Fund of Connecticut for the construction of a dormitory for both single and married medical students to be known as the Edward S. Harkness Memorial Hall. It will be located adjacent to the Sterling Hall of Medicine and the Grace-New Haven Community Hospital.

The Memorial Unit of the Grace-New Haven County Hospital which added facilities for 327 patients, a nurses' home, laundry, and dietary facilities for the entire hospital at a cost of $9,000,000, was completed and dedicated in February. This unit increases the bed capacity of the hospital to 805.

* * *

The Centennial celebration of *St. Joseph's Hospital,* Saint Paul, which occupied two days, Saturday and Sunday, May 16, 17, 1953, was most satisfactory in every way.

The scientific program which was held on Saturday was highlighted by visiting luminaries in the persons of Sir Alexander Fleming, the discoverer of penicillin, Dr. Philip S. Hench, the discoverer of cortisone, both Nobel prize winners, and Dr. Richard R. Trail, director of Papworth Village Settlement, London. The afternoon session was open to the public who took advantage of the opportunity to become informed. Names of the other prominent members of the profession who took part in the celebration both days appear in the complete program which was published in our April issue.

Some 600 friends of St. Joseph's Hospital assembled on Saturday evening for the banquet at the Saint Paul Hotel. The program following the banquet was carried out with ability and dispatch by the toastmaster, the very Reverend George E. Ryan, Rector of the Cathedral of Saint Paul. The group of songs by Lucine Amara, soprano of the Metropolitan Opera Company, were fully appreciated. Greetings from representatives of state, city and hospital organizations and addresses by Dr. Harold L. Foss, president of the American College of Surgeons and the most Reverend John Gregory Murray, Archbishop of St. Paul preceded the musical numbers.

The July issue of MINNESOTA MEDICINE will be devoted to addresses presented at the St. Joseph's Centenary.

* * *

The remodeling and expansion of *St. Luke's Hospital,* Saint Paul, which was completed within the year, cost $906,938. Of this amount, $706,958 was obtained by pledges. The balance was met by increasing the mortgage to $200,000.

The new wing which now houses operating rooms, x-ray department, laboratory, the obstetrical unit, and laundry, cost $405,335; the new heating plant, $144,481; new elevator, $42,825; and remodeling the old building, $157,754. One hundred thousand dollars was spent for new equipment.

* * *

The Ancker research unit was officially dedicated at 3 p.m. Monday, May 25, 1953. The one-story air-conditioned brick structure adjoining the Ancker Hospital in Saint Paul is windowless and consists of x-ray department, laboratory, operating room, office, and kennels. It represents an outlay of approximately $130,000 of which $60,000 was contributed by the Ramsey County Welfare Board, the balance by private subscription. The Welfare Board has also agreed to contribute $30,000 yearly for its support. Mr. George Vavoulis has been chairman of the fund-raising committee but Dr. Ivan D. Baronofsky, associate professor of surgery at the University of Minnesota, has spearheaded the project. This research unit at Ancker Hospital is the fifth to have been established in Minnesota. Already in operation are those at St. Joseph's Hospital, Saint Paul, the University Hospitals, Veterans Hospital, and the Mayo Clinic.

Participating in the dedication were Michael T. Ettel,

P&H ®

A Complete Service

FOR THE MEDICAL AND HOSPITAL PROFESSION

Physicians & Hospitals Supply Company, Inc.

1400 Harmon Place • Minneapolis 15, Minnesota

chairman of the Welfare Board; Mayor John Daubney, of Saint Paul; Dr. T. E. Broadie, superintendent of Ancker Hospital; Dr. Victor Hauser, acting chairman of the surgical staff at Ancker Hospital; Dr. Baronofsky, and Mr. Vavoulis. Participating from the University of Minnesota were: Dr. Harold S. Diehl, dean of the University of Minnesota Medical School; Dr. Owen H. Wangensteen, chairman of the surgical department of the University; Dr. Maurice B. Visscher, head of the Department of Physiology at the University, and Dr. Frank Mann, director of medical research at the Mayo Foundation, Rochester, Minnesota, who made the principal address. He called attention to the epoch-making discovery of bacteria by Pasteur, the applications of the discovery to surgery by Lister, and the institution of anesthesiology a hundred years ago. These were the foundation stones that made modern medicine and surgery possible. It was animal experimentation, however, which contributed in large measure to medical advance during the past century. Dr. Mann told of the development of research in Minnesota and how his research began in the year 1913 at the time of the meeting of the American Medical Association in Minneapolis. He asserted that the main purpose of a research laboratory is to keep alive the spirit of research with emphasis on quality rather than quantity of the work performed.

Following the presentation of certificates to the project donors, those in attendance visited the new research unit.

* * *

MINNESOTA BLUE CROSS-BLUE SHIELD

The completion of the first quarter of operation in 1953 has provided an opportunity to evaluate the progress of Minnesota Blue Shield and to make a comparative study of the first quarter of 1953 and the first quarter of 1952. This analysis discloses that Blue Shield payments to doctors of medicine in the State of Minnesota were approximately 20 per cent higher during the first quarter of 1953 than they were during the first quarter of 1952. It also indicates that the load of claims being processed has now risen to a monthly average of approximately 12,000 claims. Factually, then, during the first quarter of 1952, approximately $914,000 was paid to doctors of medicine by Minnesota Blue Shield while for the same period of 1953 these payments amounted to $1,089,000. From this it is apparent that at least during the first quarter of 1953 Blue Shield benefits are averaging approximately $60,000 per month more than they did in 1952.

These increases in Blue Shield payments are to a large extent the result of the liberalization of the Schedule of Payments and the changes in the contract which went into effect on October 1, 1952. This liberalization has had the effect of increasing the benefits more than 10 per cent without any increase in the premium charged for the contract. Not only was the Schedule of Payments increased and broadened in scope but likewise certain revisions were made in the contract itself in order to keep pace with changes occurring in the practice of medicine. These modifications of the contract included coverage for some items not previously covered as well as providing protection against the possi-

THE
MEDICAL PROTECTIVE
COMPANY
FORT WAYNE, INDIANA

PROFESSIONAL PROTECTION
EXCLUSIVELY
SINCE 1899

specialized service
assures *"know-how"*

MINNEAPOLIS Office:
Robert L. McFerran, Rep.,
2422 Clinton Ave. So., Apt. E-14,
Telephone Fillmore 1292

Distributors to the profession

of fine

Injectable Vitamins and Endocrines

Interstate Pharmacal Company

P.O. Box 252 Beloit, Wis.

MAIL ORDERS SHIPPED IMMEDIATELY

RADIUM RENTAL SERVICE
4340 CEDARWOOD ROAD
MINNEAPOLIS 5, MINNESOTA
TEL. ATLANTIC 5297

Radium element prepared in type of applicator requested

ORDER BY TELEPHONE OR MAIL
PRICES ON REQUEST

bility of abuses so as to permit the income to be used in areas of greatest benefit to the subscriber.

The increase in the number of claims being processed now as compared with 1952 is also particularly illuminating inasmuch as the processing of these claims is being accomplished without additional administrative employes yet on a sound procedural basis with the continued elimination of "red tape."

With the increased number of claims resulting in a heavier work-load, acquisition of additional clerical personnel is neither contemplated nor considered necessary. Therefore, the cost of processing claims on a per claim basis is rapidly being reduced. This is also an indication that efficient methods are now in use and that the personnel in the Claims Department is productive. It should be pointed out that on October 1, 1952, the contract was revised and new benefits were added for services rendered on or after that date. This, in effect, increased the work load by requiring claims processing under two different contract clauses at times and two different Schedules of Payments. Fewer complaints and criticisms, relatively less correspondence, and a better understanding of the Blue Shield contract by physicians has resulted from the revised methods now in use.

Significant then are these facts: (1) Benefits in 1953 based upon the amounts paid in the first quarter may exceed four and one-half million dollars. (2) Costs of administration are now remaining stable in spite of an increased work load.

It can thus be noted that Minnesota Blue Shield as the doctor's instrument for providing high-grade prepaid medical care at a cost which people can afford is accomplishing its purpose at a more rapid pace than has previously been anticipated. The continued co-operation of Minnesota doctors of medicine through the constant promotion of Blue Shield and its enrollment will provide a sound basis for its further development.

"A total of $3,659,143 in benefits have been paid out for Blue Shield subscribers during the past year," Arthur M. Calvin, executive director of the Minnesota Blue Cross-Blue Shield plans announced at the Blue Shield annual meeting held at the St. Paul Hotel on Monday, May 18, 1953.

The executive director also announced that 560,000 persons—one out of every six Minnesotans, are now enrolled in the Blue Shield medical-surgical maternity plan.

Re-elected to the Board of Directors at the annual meeting of the members for a three-year period were: C. M. Bagley, M.D., Duluth; E. M. Hammes, M.D., Saint Paul; P. S. Hoeper, M.D., Mankato, and C. A. McKinlay, M.D., Minneapolis.

Re-elected officers of the Board of Directors at the annual meeting were: O. I. Sohlberg, M.D., Saint Paul, president; R. R. Cranmer, M.D., Minneapolis, vice president; C. A. McKinlay, M.D., Minneapolis, secretary, and E. C. Bayley, M.D., Lake City, treasurer.

The board of directors voted to increase benefits under the Blue Shield contract without any increase in rates. The Blue Shield benefits to be increased will be announced at a later date.

DE-FUMER
Kills Odors

SPECIAL . . .

***ONLY* $9.95**

Entirely chrome plated
WASTE RECEPTACLES with
porcelain enamel removable
inner pail, 12 quart size.

C. F. ANDERSON CO., Inc.
Phone: ATlantic 6508
901 Marquette Avenue **Minneapolis, Minn.**

BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical Libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

BOOKS RECEIVED FOR REVIEW

THE PHYSICIAN IN ATOMIC DEFENSE. Atomic Principles, Biologic Reaction and Organization for Medical Defense. Thad P. Sears, M.D., F.A.C.P. Associate Clinical Professor of Medicine, University of Colorado School of Medicine; Chief of Medical Service, Veterans Administration Hospital, Denver; Member of Advisory Staff to Director of Civil Defense, State of Colorado; Member of Disaster Commission, Colorado State Medical Society; Colonel (MC) USAR. Foreword by James J. Waring, M.D., M.A.C.P., Professor of Medicine, University of Colorado School of Medicine. 308 pages. Illus. Price $6.00, cloth. Chicago: Year Book Publishers, Inc., 1953.

THE EPIDEMIOLOGY OF HEALTH. A New York Academy of Medicine Book. Iago Galdston, M.D., Editor. 197 pages. Price $4.00, cloth. New York: Health Education Council, 1953.

THE INTELLIGENT USE OF THE MICROSCOPE. First American Edition. C. W. Olliver. 192 pages. Illus. Price $4.09, cloth. New York: Chemical Publishing Co., Inc., 1953.

LIVING IN BALANCE. By Frank S. Caprio, M.D. 246 pages. Price $3.75. Washington, D. C.; The Arundel Press, Inc., 1951.

"Living in Balance" is written with a positive approach to understanding yourself and those about you.

It is very readable and will hold the interest of anyone wishing to improve personality.

F.A.

ROENTGENOLOGIC DIAGNOSIS OF DISEASES OF BONES. By David G. Pugh, Assistant Professor of Radiology, Mayo Foundation, Graduate School, University of Minnesota; Consultant, Section on Roentgenology, the Mayo Clinic. 316 pages. Illus. Price, $5.00. New York: Thomas Nelson & Sons, 1951.

The fact that this book is reprinted from Nelson's loose leaf "Diagnostic Roentgenology" alone speaks for its nature. Dealing with bone lesions other than those produced by trauma, the material covered is presented completely and concisely. Since the radiologist is primarily a clinical consultant, each subject is introduced by its clinical manifestations which in turn are reflections of the basic physiological and pathological aspects of each disease. This is a refreshing approach in a roentgenologic work. The material covered is clinically practical having been drawn from the files of the Mayo Clinic, and, while including descriptions of such rare conditions as ochronosis and Fanconi's syndrome, it gives adequate attention to arthritis, congenital dislocation of the hip joints and other lesions seen oftener by the doctor. The way in which each subject is presented more or less independently enhances the value of the book and the scarcity of elaborate tables and classifications adds to its readability.

The book has already established itself in radiological and academic circles and can be recommended widely to all those interested in the x-ray diagnosis of bone lesions.

Leo A. Nash, M.D.

BRAIN SURGEON: The Autobiography of William Sharpe. By William Sharpe, M.D., Director of Neurosurgery, Manhattan General Hospital, New York; Life Fellow American College of Surgeons and New York Academy of Medicine. 271 pages. Price $3.75. New York: The Viking Press, 1952.

It is good to see a doctor's autobiography again, since these works are first hand histories of medicine and, also, provide entertaining reading. In the case of the autobiography of Doctor William Sharpe, both of these conditions are satisfied. Beginning in the classic manner as the son of a minister who started his career at Harvard University with the then existing equivalent of an athletic scholarship about 1900, he takes the reader through a colorful professional life as student, teacher, pioneer neurosurgeon and humanist. Among his friends and professional contacts we find many of the great medical men, to mention only Bilroth, Waldeyer, Lassar, Cushing and Dandy among others. He was an undergraduate classmate of Franklin Delano Roosevelt and in his later years met both Hitler and Stalin. His experiences are world-wide and at times actually seem to rival those of Walter Mitty. Pioneering in the practice of neurosurgery in New York City and numerous very

Cook County Graduate School of Medicine

POSTGRADUATE COURSES—1953

SURGERY—Intensive Course in Surgical Technic, two weeks, starting June 15, July 6, August 3
  Surgical Technic, Surgical Anatomy and Clinical Surgery, four weeks, starting August 3
  Surgical Anatomy and Clinical Surgery, two weeks, starting June 15, August 17
  Fractures and Traumatic Surgery, two weeks, starting June 15
  Esophageal Surgery, one week, starting June 22
  Breast and Thyroid Surgery, one week, starting June 22
  Gallbladder Surgery, ten hours, starting June 29
  Surgery of Colon and Rectum, one week, starting September 21
  Basic Principles in General Surgery, two weeks, starting September 21
  General Surgery, one week, starting October 5
  General Surgery, two weeks, starting October 12
  Thoracic Surgery, one week, starting October 12
GYNECOLOGY—Intensive Course, two weeks, starting June 15, September 21
  Vaginal Approach to Pelvic Surgery, one week, starting August 31
OBSTETRICS—Intensive Course, two weeks, starting October 5
MEDICINE—Intensive General Course, two weeks, starting September 28
  Electrocardiography and Heart Disease, two weeks, starting July 13
  Allergy, one month and six months, by appointment
CYSTOSCOPY—Ten-day Practical Course starting every two weeks
UROLOGY—Intensive Course, two weeks, starting September 28

TEACHING FACULTY—ATTENDING STAFF OF COOK COUNTY HOSPITAL

ADDRESS: REGISTRAR, 707 South Wood Street, Chicago 12, Illinois

human incidents are cited indicating a full life professionally and otherwise ending with the philosophies of a humanist. But, what else could one expect from anyone exposed to such experiences? Lay reviewers have described Dr. Sharpe as a connoisseur of living but this is only a lesser aspect of the man as we interpret his life. Aside from not having real literary value, the only criticism we find is the presentation of a controversial matter on the etiology and prophylaxis of cerebral palsy which lay readers cannot evaluate failing to understand that there are honest differences of opinion in medicine. This does not detract from the value of the book, however, and it is fully recommended as diversional reading for doctors, particularly by those who can be classed as his contemporaries.

Leo A. Nash, M.D.

ALLERGY IN RELATION TO OTOLARYNGOLOGY. French K. Hansel, M.D., M.S., F.A.C.A., Editor-in-Chief, Annals of Allergy; Director of The Hansel Foundation; Associate Professor of Otolaryngology, Washington University School of Medicine. Panel Discussion. 77 pages. Price $2.50. Saint Paul: Bruce Publishing Co., 1949.

This book consists of an initial discussion of the subject material by Dr. Hansel. Various aspects of the subject are then discussed in turn by a panel of nine other men who are well known otolaryngologists and allergists.

The importance of this discussion is brought out by the high percentage of patients reporting to these doctors with nasal symptoms, who were found to have an allergic etiology. Dr. Hansel has clearly described his technique for staining the nasal and sinus secretions for eosinophils. This is followed by colored plates and a method to be used in evaluating the results obtained from these stained smears.

This book is an official publication of The American College of Allergists, Inc.

Donald W. Koza, M.D.

HOW TO GET A DOCTOR—BOOKLET AVAILABLE SOON

A new pamphlet—"A Doctor for your Community"—will be published some time this month by the American Medical Association. This booklet, directed toward communities seeking a physician, describes briefly the problems involved in obtaining a doctor, the things a community can do to attract and keep a doctor, and examples of what has been done elsewhere. A joint project of the Council on Medical Service, Council on Rural Health and Department of Public Relations, the booklet will be available to state medical societies for distribution to communities listed with their placement services.

In addition, the Council on Medical Service has compiled information from numerous state placement services in a reprint which will be especially useful to state societies interested in expanding their activities in this field.

Hall, Anderson & Nordehn

PRESCRIPTION PHARMACY
BIOLOGICALS
PHYSICIANS' SUPPLIES

SAINT PAUL, MINN.

LOWRY MEDICAL ARTS BUILDING
TELEPHONE: CEDAR 2735

ARTIFICIAL LIMBS
ORTHOPEDIC APPLIANCES
TRUSSES
SUPPORTERS
ELASTIC HOSIERY

FREJKA
Abduction Pillow Splint
by the
Original Maker

For displasia of the hip in the newborn and in early postnatal life (as described by Dr. V. L. Hart, Journal of Bone and Joint Surgery, Vol. 31-A, pp 357-372, April, 1949).

Prompt, painstaking service

BUCHSTEIN-MEDCALF CO.
223 So. 6th Street Minneapolis 2, Minn.

CALIFORNIA

A new illustrated booklet is available, describing the hospitals of the California Department of Mental Hygiene and listing the professional opportunities there. Physicians are invited to write for this publication.

California State Personnel Board
1015 L Street, Sacramento 14, California

PATTERSON SURGICAL SUPPLY COMPANY
130 W. Seventh Street, St. Paul 2, Minn.
HOSPITAL AND PHYSICIANS SUPPLIES AND EQUIPMENT
Cedar 1781-82-83

Ulmer
PHARMACAL COMPANY
1400 Harmon Place
Minneapolis 3, Minnesota

send for our new brochure M-653b on
ULVICAL "ULMER"
the last word in pre-natal therapy

Index to Advertisers

Abbott Laboratories 574, 575, 649
Aloe, A. S., Co. 546
American National Bank 652
Ames Co., Inc. 578
Anderson, C. F., Co. 666
Ayerst, McKenna & Harrison, Ltd. 580

Baker Laboratories, Inc. 579
Benson Optical Co. 663
Bilhuber-Knoll Corporation 658
Birches Sanitarium, Inc. 648
Boyd & Boyd, Inc. 576
Brown & Day, Inc. 660
Buchstein-Medcalf Co. 668

California State Personnel Board 668
Camel Cigarettes 587
Caswell-Ross Agency 570
Classified Advertising 670
Coca-Cola Co. 657
Cook County Graduate School of Medicine 667
Cordelia of Hollywood Brassieres 651
Crestview Hospital 661

Dahl, Joseph E., Co. 663
Danielson Medical Arts Pharmacy, Inc. 662
Druggists Mutual Insurance Co. 669

Ewald Bros. Inside Back Cover

Fuller Pharmaceutical Co. 582

General Electric Co. 581
Glenwood Hills Hospitals 671

Hall, Anderson & Nordehn 668
Hazelden Foundation 660
Homewood Hospital 656

Interstate Pharmacal Co. 665

Juran & Moody 655

Lederle Laboratories Facing page 572
Lilly, Eli, & Co. Front Cover, 588

Mead Johnson & Co. 672
Medical Protective Co. 665
Merck & Co. Facing page 580
Milwaukee Sanitarium Back Cover
Mounds Park Hospital Back Cover

North Shore Health Resort 657

Parke, Davis & Co. Inside Front Cover, 569
Patterson Surgical Supply Co. 668
Pfizer, Chas., & Co., Inc. 577
Physicians Casualty Association 652
Physicians & Hospitals Supply Co., Inc. 584, 664
Professional Credit Protective Bureau 573

Radium Rental Service 665

St. Croixdale Sanitarium 572
Schering Corporation 585
Searle, G. D., & Co. 643
Sheltering Arms 659
Squibb, E. R., & Sons, Division of Mathieson Chemical Corporation 647

Ulmer Pharmacal Co. 669
Upjohn 583

Winthrop-Stearns, Inc. 645
World Medical Association 653
Wyeth 586

Insurance at a Saving
Druggists' **Mutual Insurance** Company
OF IOWA, ALGONA, IOWA
Fire - Tornado - Automobile Insurance
Prompt Loss Service
MINNESOTA REPRESENTATIVE—S. E. STRUBLE, WYOMING, MINN.

Classified Advertising

Replies to advertisements with key numbers should be mailed in care of MINNESOTA MEDICINE, *2642 University Avenue, Saint Paul 14, Minn.*

FOR RENT—Attractive doctor's suite in south Minneapolis. Wonderful location for a practice to be built up, or as an outlying office for a downtown doctor Write Wm. L. Cochrane, 7301 Fremont Avenue South, Minneapolis 19, Minnesota. Telephone RO 9-8758.

WANTED—Physician to replace two physicians who are returning to Military Service. Northwestern Minnesota rural community. Address E-363, care MINNESOTA MEDICINE.

WANTED—General practitioner to join five-man clinic caring for a mining company's employes and families. Includes general practice, obstetrics, surgery and industrial work. Good salary, all equipment and car furnished. Living conditions and schools excellent. Location—Black Hills. Immediate opening. Address E-355, care MINNESOTA MEDICINE.

WANTED—Young associate in busy general practice. Completely modern clinic building, new equipment. New 20-bed hospital, one block from clinic. Salary open. Address E-357, care MINNESOTA MEDICINE.

WANTED—Three General Practitioners for three unopposed excellent locations in rich farming communities. Each should gross $20,000.00 in first year. Will assist in obtaining all office equipment; absolutely no strings attached. Hospital facilities excellent. Will hold locations open until July 1, if desired. Write Herbert A. Hartfield, M.D., 117½ South Main Street, Montevideo, Minnesota.

EXCELLENT OPPORTUNITY—For eye, ear, nose and throat man in Southern Minnesota Clinic. Address E-360, care MINNESOTA MEDICINE.

WANTED—Young physician as assistant or to buy a very large general practice—25 miles from Saint Paul. Complete equipment. Address E-358, care MINNESOTA MEDICINE.

OFFICES FOR RENT—For physicians and surgeons. Occupied by prominent physicians for past 25 years. Call Humboldt 9-1748, 891 Rice Street, Saint Paul 3, Minnesota.

PHYSICIAN WANTED FOR LOCUM TENENS—July and August and possibly September. Near Minneapolis. Excellent salary. Call 162—Osseo. Drs. Bloedel and Ransom, Osseo, Minnesota.

WANTED—Physician interested in general practice in suburb of Twin Cities. Ground floor office, well equipped; hospital facilities available. Permanent association for right man. Address E-366, care MINNESOTA MEDICINE.

WANTED: General practitioner to take over practice of physician leaving for service. Southern Minnesota town 18 miles from hospital. Salary open. Address E-374, care MINNESOTA MEDICINE.

PLACEMENT SERVICE

The Minnesota State Medical Association maintains a Medical Placement Service for the benefit of physicians who are looking for locations and positions; also for communities, medical groups and physicians who are looking for licensed medical assistance. For information, write to the Minnesota State Medical Association, 496 Lowry Medical Arts Bldg., Saint Paul 2, Minnesota.

POSITION WANTED—As business manager of small hospital or small group of doctors in Minnesota or in Wisconsin near Minneapolis-Saint Paul area. Experienced in both fields. Address E-370, care MINNESOTA MEDICINE.

WANTED—Surgical assistant in general, thoracic, gynecological and industrial surgery. Prefer young man just finished rotating internship, wishing to get some surgical training before going into general practice. Address E-369, care MINNESOTA MEDICINE.

FOR SALE—American crystal controlled mobile diathermy—XM400 dynotherm. Council-accepted, practically new, with stand—$300. Address E-371, care MINNESOTA MEDICINE.

WANTED—A general practitioner for Fergus Falls State Hospital. Beginning salary $626.00 per month. Three bed room house available, partially furnished, subsistence, garage, Government working conditions, paid holidays, vacation, sick leave and retirement pension plan. Address inquiries to W. L. Patterson, M.D., Superintendent Fergus Falls State Hospital, Fergus Falls, Minnesota.

FOR SALE—Picker 25 milliampere mobile x-ray unit, in perfect condition. Will install and service. Very reasonable price. Address E-372, care MINNESOTA MEDICINE.

ASSOCIATE WANTED—In private practice of Neurology and Psychiatry in Saint Paul. Specialty training not required. Salary open. Address E-362, care MINNESOTA MEDICINE.

WILL DONATE complete Westinghouse x-ray equipment and Basal Metabolism machine for shipment charges. Retired physician. Address E-361, MINNESOTA MEDICINE.

WANTED—General Practitioner, to be associated with busy general practice, South Dakota. Able to do obstetrics and some general surgery. Completely modern clinic building, new equipment. New 20-bed hospital in county seat town of 1200. Salary open. Early partnership. Address E-373, care MINNESOTA MEDICINE.

WANTED—Physician for combined city and school health department. Public health training desirable but not required. Salary $9,000 to $12,000. Address James K. Michie, Superintendent Hibbing Schools, Hibbing, Minnesota.

DOCTOR . . . *This is Your Hospital and Your School of Neuropsychiatric Nursing*

(By that we mean that not only have these institutions undertaken to constitute a haven of help for patients, but they form, in your interest a *remarkable facility for you professionally.)*

View of hospital, school, buildings and environs, 7 minutes from downtown Minneapolis

A COMPLETE NEURO-PSYCHIATRIC HOSPITAL

Up-to-date in all respects, new, functional buildings, set in spacious grounds, rehabilitation center, electroencephalography, therapies, laboratory. One of the largest neuro-psychiatric staffs in the United States. A voluntary, non-profit, non-sectarian institution of which this region may be proud.

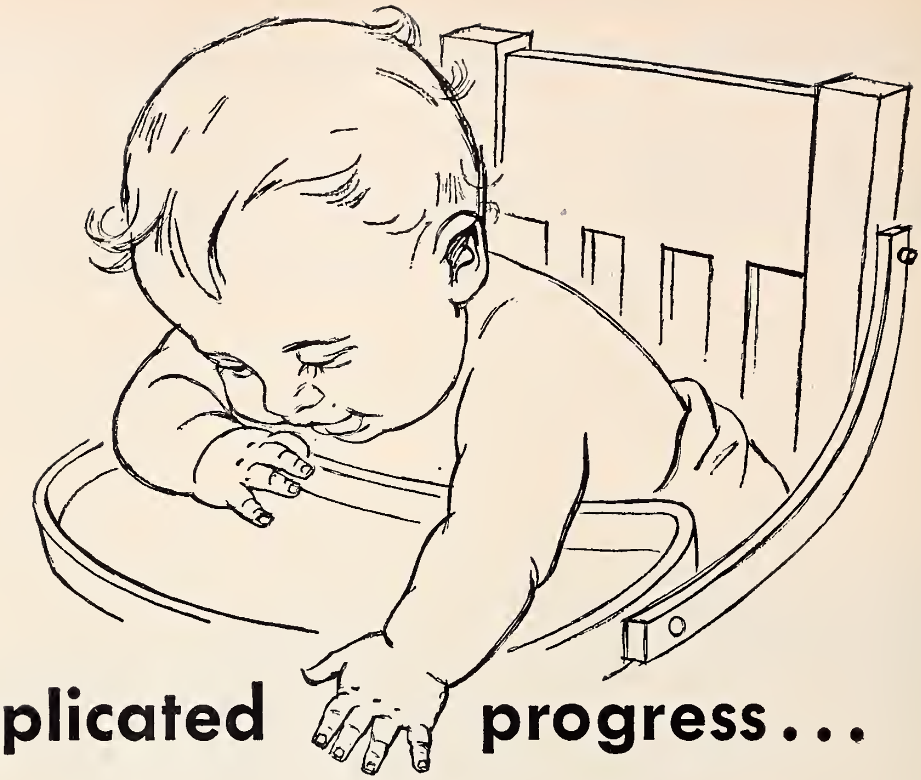
SCHOOL FOR NEURO-PSYCHIATRIC NURSING

To offset the existing universal shortage of nurses, Glenwood Hills conducts a one-year course in neuropsychiatric nursing. You have observed the skill and attitudes of our graduates and trainees. Recruit one or two in behalf of your profession as a "contribution" stipulating that we send them back to you when trained. We will. Meanwhile tuition, room and board are free.

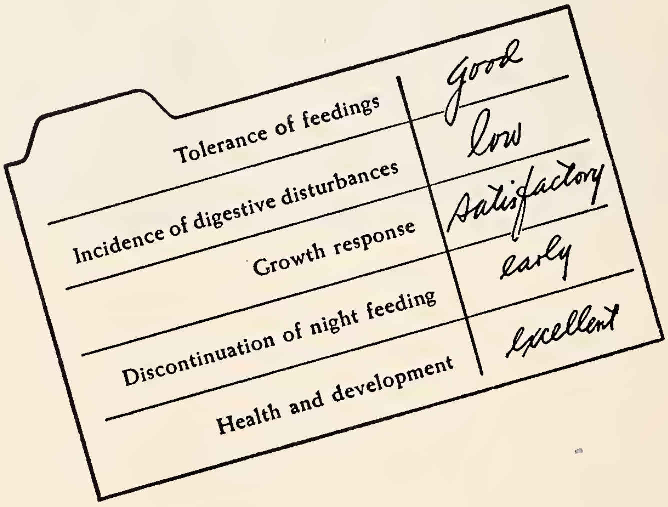
Glenwood Hills Neuro-psychiatric Hospital
School of Neuro-psychiatric Nursing

3901 Golden Valley Road, Minneapolis 22, Minnesota JUniper 2771

Helen Swenson Rascop, Director of Nurses



uncomplicated progress...



Tolerance of feedings	good
Incidence of digestive disturbances	low
Growth response	Satisfactory
Discontinuation of night feeding	early
Health and development	excellent

The uncomplicated nutritional progress[1] of infants fed Lactum® speaks for its sound rationale. Lactum is Mead's liquid formula made from whole milk and Dextri-Maltose.® It provides generous milk protein for sturdy growth and sound tissue structure, with sufficient calories to spare protein and meet the infant's energy needs.

Lactum is convenient and easy to prepare—simply mix equal parts of Lactum and water for a formula supplying 20 calories per fluid ounce.

[1] Frost, L. H., and Jackson, R. L.: J. Pediat. 39: 585-592, 1951.

Lactum
LIQUID FORMULA FOR INFANTS
(Modified Milk)
MEAD

Lactum

MEAD

MEAD JOHNSON & COMPANY
Evansville 21, Ind., U.S.A.

in the successful management of epilepsy

DILANTIN®

a most effective

and widely used anticonvulsant

In *grand mal,* psychomotor seizures, Jacksonian epilepsy and focal convulsions, DILANTIN is a therapy of choice.[1] It "offers the special advantage of . . . specificity for the motor cortex . . . without producing dullness of apprehension, lethargy, and lassitude. . . ."[2]

DILANTIN ". . . is particularly adapted for use in combination . . ."[3] and ". . . produces a spectacular result in *grand mal* attacks, particularly when combined with phenobarbital. . . ."[4]

DILANTIN Sodium (diphenylhydantoin sodium, Parke-Davis) is supplied in Kapseals® of 0.03 Gm. (½ gr.) and 0.1 Gm. (1½ gr.) in bottles of 100 and 1000.

(1) Krantz, J. C., and Carr, C. J.: The Pharmacologic Principles of Medical Practice, Baltimore, The Williams & Wilkins Company, 1949 (Reprinted 1950), p. 518. (2) *ibid,* p. 515. (3) Carter, S.: Epilepsy, in Conn, H. F.: Current Therapy 1952, Philadelphia, W. B. Saunders Company, 1952, p. 612. (4) Salter, W. T.: A Textbook of Pharmacology, Philadelphia, W. B. Saunders Company, 1952, p. 231.

MEDICAMENTA VERA
PD & Co

Parke, Davis & Company
DETROIT, MICHIGAN

WAIT A MINUTE

Haven't you forgotten something? You work like a nailer striving to make and save enough for your standard of living and unforeseen needs, yet both income and savings can be wiped out even to the point of putting you in debt—all because you put off securing income protection.

Don't procrastinate longer. Send in your application. Why not call us today? The best value in non-cancellable Accident and Sickness insurance is through the Plan available to you as a member of the Minnesota State Medical Association.

ACT NOW.

CR
AGENCY
Minneapolis

CASWELL-ROSS AGENCY

1177 N. W. Bank Building
Minneapolis—MA 2585

Minneapolis 2, Minnesota
St. Paul—PR 7004

Insurors to:

Minnesota State Bar Association
Minnesota State Dental Association
Minnesota State Medical Association
Minnesota Society of C. P. A.
Minnesota State Pharmaceutical Assn.
Minnesota Auto Dealers Association
Minnesota Federation of Eng. Societies
Minnesota State Veterinary Medical Soc.
Hennepin County Medical Society
Hennepin County Bar Association
11th Judicial Bar Association
Minneapolis Association of Life Underwriters

Ramsey County Medical Society
Ramsey County Bar Association
St. Paul District Dental Soc.
Minneapolis District Dental Soc.
St. Cloud Dental and Stearns County Medical Society
Duluth District Dental Society
East Central Medical Society
St. Louis County Medical Society
West Central Dist. Dental Society
Northwest Proprietors Association
St. Paul Life Underwriters, Inc.

Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 36 **July, 1953** **Number 7**

Contents

ST. JOSEPH'S HOSPITAL, 1853—1953.
Robert Rosenthal, M.D., Saint Paul, Minnesota... 693

SOME PERSONAL OBSERVATIONS ON THE USE OF ROUTINE CHEST RADIOGRAPHY.
Richard Trail, M.D., London, England........... 701

A REMINISCENCE OF CERTAIN EVENTS BEFORE, DURING AND AFTER THE DISCOVERY OF CORTISONE.
Philip S. Hench, M.D., Rochester, Minnesota..... 705

PSYCHIATRY AND RELIGION.
Francis J. Braceland, M.D., Hartford, Connecticut 711

INDICATIONS AND PRECAUTIONS IN CHOLECYSTECTOMY.
Warren H. Cole, M.D., Chicago, Illinois......... 714

HUMORAL VS. NEURAL REGULATION OF THE EXTRA-HEPATIC BILIARY TRACT.
Edward A. Boyden, Ph.D., Minneapolis, Minnesota 720

WOMEN IN MEDICINE.
Burgess Gordon, M.D., Philadelphia, Pennsylvania 724

NEWER CONCEPTS ON THE COAGULATION OF THE BLOOD.
Armand J. Quick, Ph.D., M.D., Milwaukee, Wisconsin 726

MODERN HEALTH PROBLEMS OF THE UNITED STATES.
Ancel Keys, Ph.D., Minneapolis, Minnesota....... 730

LABORATORY AIDS TO MEDICAL PRACTICE:
Blood Banking in Smaller Minnesota Communities.
Rudolph W. Koucky, M.D., Minneapolis, Minnesota 736

CASE REPORT:
Spinal Injection of Blood to Lower Blood Pressure in Essential Hypertensive Patients.
J. J. Heimark, M.A., M.D., and *R. L. Parsons, M.D.,* Monterey, Minnesota......... 738

HISTORY OF MEDICINE IN MINNESOTA:
Medical History of the County of Yellow Medicine. *(Continued)*
Mildred B. Lee, Granite Falls, Minnesota...... 740

PRESIDENT'S LETTER:
Support Equals Improvement.................... 750

EDITORIAL:
The Increasing Percentage of Bacterial-Resistant Strains to Antibiotics 751
Watch it, Doc................................ 752

THE DEAN'S PAGE:
The Medical School—Its Objectives and Organization 754

MEDICAL ECONOMICS:
AMA delegates meet, discuss, debate, plan....... 755
More savings, spending reflect living standard rise 756

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS... 757

MINNEAPOLIS SURGICAL SOCIETY:
Meeting of December 4, 1952.................. 758
Strangulation Obstruction Due to Internal Hernia.
B. P. Mitchell, M.D., Minneapolis, Minnesota... 758
The Thyrotoxic Heart.
Dale Correa, M.D., Minneapolis, Minnesota..... 759
Meeting of January 8, 1953..................... 761
Immediate Cholangiography in Surgery.
Harold D. Caylor, M.D., Bluffton, Indiana..... 761
Extended or Super-radical Mastectomy for Cancer of the Breast.
F. John Lewis, M.D., Minneapolis, Minnesota.. 763

IN MEMORIAM.................................. 768

REPORTS AND ANNOUNCEMENTS..................... 772

OF GENERAL INTEREST.......................... 776

BOOK REVIEWS 787

Contents of MINNESOTA MEDICINE copyrighted by Minnesota State Medical Association, 1953

Entered at the Post Office in Saint Paul as second class mail matter. Accepted for mailing at the special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 13, 1918.

MINNESOTA MEDICINE

OFFICIAL JOURNAL OF THE MINNESOTA STATE MEDICAL ASSOCIATION

Published by the Association under the direction of its Editing and Publishing Committee

Office of Minnesota State Medical Association.
496 Lowry Medical Arts Bldg., Saint Paul 2, Minnesota.

EDITING AND PUBLISHING COMMITTEE

E. M. HAMMES, Saint Paul
PHILIP F. DONOHUE, Saint Paul
L. M. EATON, Rochester
J. J. HEIMARK, Monterey
C. L. OPPEGAARD, Crookston
T. A. PEPPARD, Minneapolis
H. A. ROUST, Montevideo
O. W. ROWE, Duluth
HENRY L. ULRICH, Minneapolis
A. H. WELLS, Duluth

EDITORIAL STAFF

CARL B. DRAKE, Saint Paul, Editor
GEORGE EARL, Saint Paul, Associate Editor
HENRY L. ULRICH, Minneapolis, Associate Editor

BUSINESS MANAGER

J. R. BRUCE

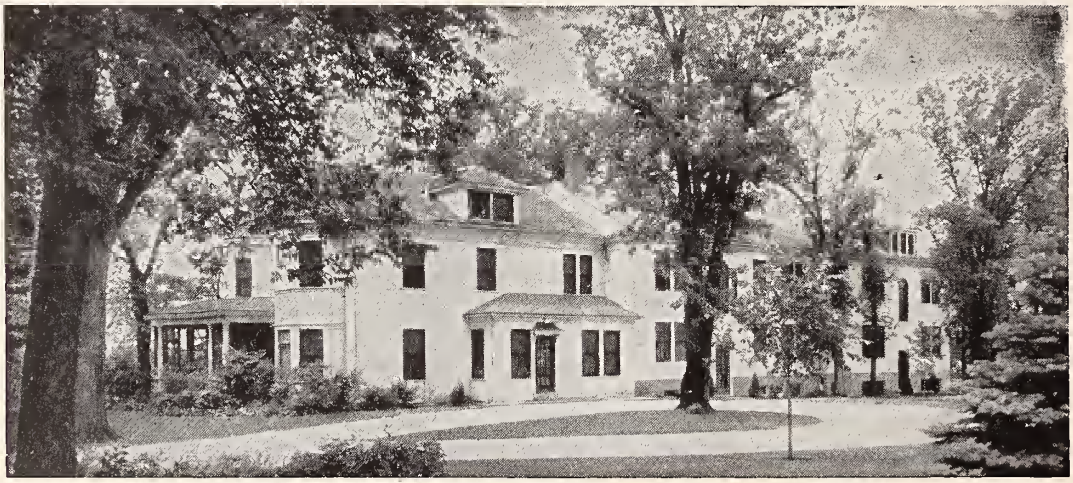
Annual Subscription—$3.00. Single Copies—$0.40. Foreign and Canadian Subscriptions—$3.50

The right is reserved to reject material submitted for editorial or advertising columns. The Editing and Publishing Committee does not hold itself responsible for views expressed either in editorials or other articles when signed by the author.

Classified advertising—ten cents a word; minimum charge, $2.00; key number, 25c additional. Remittance should accompany order.

Display advertising rates on request.

Address all communications concerning the journal to Minnesota Medicine, 2642 University Avenue, Saint Paul 14, Minnesota. Telephone Nestor 2641.



A MODERN
PRIVATE
SANITARIUM

for the
Diagnosis, Care
and Treatment
of Nervous
and Mental
Disorders

MAIN BUILDING—One of 10 Units in "Cottage Plan"

ST. CROIXDALE ON LAKE ST. CROIX

PRESCOTT, WISCONSIN

Located on beautiful Lake St. Croix, 18 miles from the Twin Cities, it has the advantages of both City and Country. Every facility for treatment provided, including recreational activities and occupational-therapy under trained personnel. Close personal supervision given patients, and modern methods of therapy employed. Inspection and cooperation by reputable physicians invited. Rates very reasonable. Illustrated folder on request.

Prescott Office
Prescott, Wisconsin
Howard J. Laney, M.D.
Tel. 39 and Res., 76

Consulting Neuro-Psychiatrists
Hewitt B. Hannah, M.D., Andrew J. Leemhuis, M.D.
527 Medical Arts Bldg., Tel. MAin 1357, Minneapolis, Minn.

Superintendent
Ella M. Leseman
Prescott, Wisconsin
Tel. 69

". . . and please get people to pay what they owe Daddy. Mommy says that's why he's so cross."

Are you burdened by a heap of uncollected accounts? The Professional Credit Protective Bureau can really help you.

The Professional Credit Protective Bureau is collecting thousands of past due accounts in the professional field.

The Professional Credit Protective Bureau is a credit control organization that sees that the patient pays direct to the supplier of services. In other words you PAY THE COLLECTION ORGANIZATION AFTER YOUR PATIENT HAS PAID YOU and neither you nor the debtor is embarrassed.

Ninety-two leading trade associations . . . including many medical and dental organizations . . . are recommending this credit control system as part of their service to members.

It will pay you to investigate this tried and true system. Use the attached coupon.

Professional Credit Protective Bureau
724 Metropolitan Bldg., Dept. MM 7-53
Minneapolis 1, Minn.
Please send me full details on the operation of your collection service.

Name ....

Address ....

City .... State ....

Division of

The I.C. System

724 Metropolitan Bldg.

Minneapolis 1, Minn.

When organisms resist the other

antibiotics . . .

USE ERYTHROCIN*

. . . especially effective against gram-positive organisms including those resistant to penicillin and the other antibiotics.

USE ERYTHROCIN*

. . . has low toxicity; orally effective against infections caused by staphylococci, streptococci and pneumococci.

USE ERYTHROCIN*

. . . indicated in pharyngitis, tonsillitis, scarlet fever, pneumonia, erysipelas, osteomyelitis and pyoderma.

USE ERYTHROCIN*

. . . gastrointestinal disturbances mild and relatively rare; no serious side effects reported.

USE ERYTHROCIN*

. . . fully potent; average adult daily dose 0.8 to 2.0 Gm., depending on type, severity of infection.

USE ERYTHROCIN*

. . . special absorption-favoring coating; 0.1 Gm. (100 mg.) tablets supplied in bottles of 25 and 100.

Abbott

* *Trade Mark for*
ERYTHROMYCIN, ABBOTT

1-178

Mothers will thank you

Swallowed Whole

Chewed
Or in Food Or Liquid

Dissolved on Tongue

NEW FLAVORED

CHILDREN'S SIZE
BAYER ASPIRIN

We will be pleased to send samples on request

THE BAYER COMPANY DIVISION of Sterling Drug Inc.
1450 Broadway, New York 18, N. Y.

- The Best Tasting Aspirin You Can Prescribe.
- The Flavor Remains Stable Down to the Last Tablet in the Bottle.
- 24 Tablet Bottle . . . 2½ gr. each 15¢

2½ gr. ◎ ⇨ ◗ 1¼ gr.

Grooved Tablets—
Easily Halved.

Upjohn

absorbable hemostat:

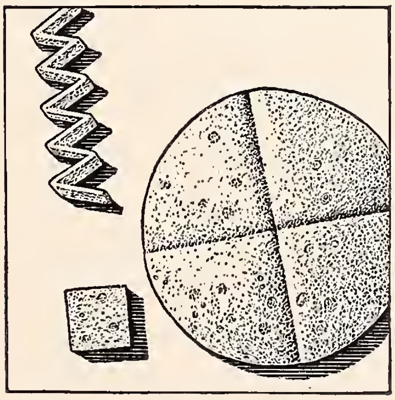
Gelfoam

Trademark Reg. U.S. Pat. Off. BRAND OF ABSORBABLE GELATIN SPONGE

Available in a large variety of sizes and forms, including:

Surgical sponges
Compressed surgical sponges
Dental packs
Gynecologic packs
Nasal packs
Prostatectomy cones
Tumor diagnosis kit

The Upjohn Company, Kalamazoo, Michigan



If YOU *fell victim to a*

CORONARY, PARALYSIS OR ANY TOTAL DISABILITY

What type of INCOME PROTECTION *would you want?*

You would want the most up-to-date Comprehensive Contract Available to the Executive, Business or Professional Man.

You Might Require . . .

$1,000.00 Monthly while Hospital confined
400.00 Monthly Benefit first five years and
300.00 thereafter, even for life.

You Would Want . . . if You Can Qualify . . .

Lifetime Benefits for both Accidents and Sickness

Full Benefits Payable for Life for disability occurring before 60

Non-Confining Sick Benefit for 5 Years—Non-aggregate

Lifetime Protection—contract does not terminate at any age

Benefits from First Day with minimum claim 7 days

No Increase in Premium regardless of your attained age

Lifetime Income for Accidental Loss of sight, hands or feet

Waiver of Premium Payment after 6 months of total disability

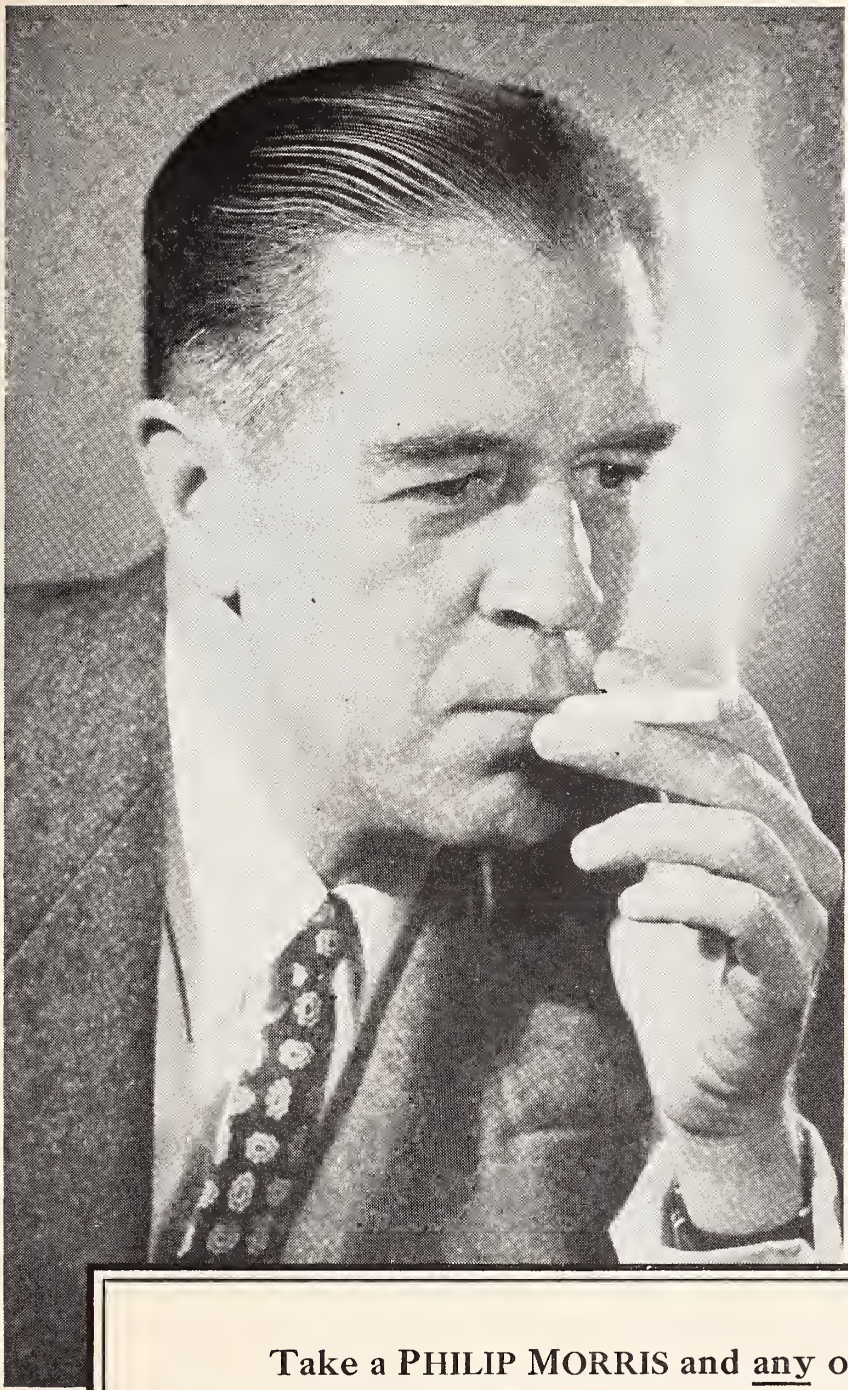
A policy that cannot be restricted to exclude any disease or injury originating after the policy is issued

Renewal of policy guaranteed so long as you are active in your work, pay premiums according to the contract, and the plan remains in effect

Available in units up to $600 per month for men under 59 WHO CAN QUALIFY. Attractive programs also available to men age 75 and under.

The New Silent Partner Program

BOYD & BOYD, INC.
30 EAST ADAMS • CHICAGO, ILLINOIS
UNDERWRITTEN BY CONTINENTAL CASUALTY COMPANY



Doctor, be your own judge... try this simple test

With so many claims made in cigarette advertising, you, Doctor, no doubt prefer to judge for yourself. So won't you make this simple test?

Take a PHILIP MORRIS and any other cigarette

1. Light up either one first. Take a puff—get a good mouthful of smoke—and s-l-o-w-l-y let the smoke come *directly* through your nose.
2. Now, do exactly the same thing with the other cigarette.

You will notice a distinct difference between PHILIP MORRIS and any other leading brand.

PHILIP MORRIS

Philip Morris & Co. Ltd., Inc., 100 Park Avenue, New York 17, N. Y.

"PREMARIN"

…"sense of well-being"…

In addition to relief of menopausal symptoms, "a feeling of well-being or tonic effect" was frequently reported by patients on "Premarin" therapy.*

"PREMARIN®" *in the menopause*

Estrogenic Substances (water-soluble) also known as Conjugated Estrogens (equine). Tablets and liquid.

*Harding, F. E.: West. J. Surg. *52*:31 (Jan.) 1944.

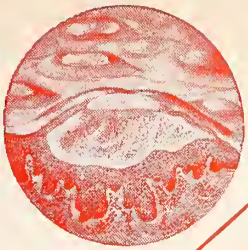
"PREMARIN"

5311

Ayerst®

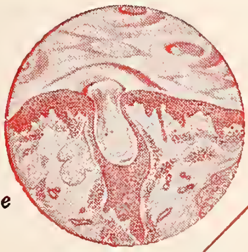
AYERST, McKENNA & HARRISON LIMITED • *New York, N. Y.* • *Montreal, Canada*

impetigo



skin infections and antibiotics

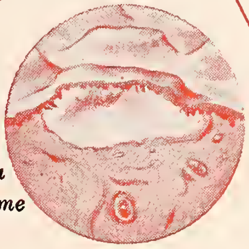
acne



pyoderma

folliculitis

erythema multiforme



Since cutaneous bacterial infections "probably account for more disability than any other group of skin diseases,"[1] the availability of broad-spectrum Terramycin has been particularly helpful in controlling these common disorders. This pure, well-tolerated antibiotic is markedly effective against the wide range of organisms often implicated as primary or secondary pathogens in skin disease. Successful clinical experience[2,3,4] in the treatment of impetigo, acne, pyodermas, erythema multiforme and other cutaneous infections recommends the selection of Terramycin as an agent of choice in common diseases of the skin. Terramycin is supplied in convenient oral and intravenous dosage forms.

1. *Bednar, G. A.: South. M. J. 46:298 (March) 1953.*
2. *Wright, C. S. et al.: A. M. A. Arch. Dermat. & Syph. 67:125 (Feb.) 1953.*
3. *Robinson, H. M. et al.: South. M. J. (in press).*
4. *Andrews, G. C. et al.: J. A. M. A. 146:1107 (July 21) 1951.*

Terramycin

BRAND OF OXYTETRACYCLINE

Pfizer **CHAS. PFIZER & CO., INC.**
Brooklyn 6, N. Y.

Meat and its applicability in the Dietary Management of Atherosclerosis

Contrary to the former belief that serum cholesterol levels are primarily related to ingested animal fat and consequently to dietary cholesterol, it now appears that the total amount of fat in the diet, not its source or cholesterol content, is a more important factor in determining the blood cholesterol concentration.[1,2,3,4] Clinical observation has shown that ingestion of vegetable fat—which contains no cholesterol—will, like fats of animal origin, raise the serum cholesterol level.[3,5]

Recent basic research on the influence of fats and cholesterol on human health has done much to further progress in the fight against atherosclerosis. It will serve well in dispelling the mistaken fear that reasonable amounts of foods of animal origin predispose the individual to this vascular disease.[6] As a matter of fact, a dietary inadequate in essential nutrients but providing too many calories and too much fat from *any* source may well be an important factor underlying the deposition of fat and cholesterol in the arteries and liver.

Cumulative evidence indicates that lowered blood levels of cholesterol may be effected by restricting the total fat intake.[1] Except in instances of refractory hypercholesteremia, in which a daily fat intake as low as 10 Gm. may not reduce cholesterol levels to normal, diets containing 20 to 30 Gm. of fat, or even more, often produce low cholesterol blood levels. In the clinical application of this principle, various palatable, low fat diets which supply three servings of meat daily (containing 18 Gm. of fat) have recently been suggested for the dietary management of arteriosclerosis and for enlisting the cooperation of patients.[1] The meat servings were chosen from a large variety of cuts and kinds of meat (fat trimmed off, as lean as possible). Meat adds to the eating appeal of the fat-restricted diet and contributes important amounts of biologically complete protein, the B group of vitamins including B_{12}, and food iron—all of which are important for a good state of nutrition in the atherosclerotic patient.

---

1. Hildreth, E.A.; Hildreth, D.M., and Mellinkoff, S.M.: Principles of a Low Fat Diet, Circulation 4:899 (Dec.) 1951.
2. Bloch, K.: The Intermediary Metabolism of Cholesterol, Circulation 1:214 (Feb.) 1950.
3. Keys, A.; Mickelson, O.; Miller, E.V.O., and Chapman, L.B.: The Relation in Man Between Cholesterol Levels in the Diet and in the Blood, Science 112:79, 1950.
4. Gubner, R., and Ungerleider, H.E.: Arteriosclerosis, a Statement of the Problem, Am. J. Med. 6:60, 1949.
5. Hildreth, E.A.; Mellinkoff, S.M.; Blair, G.W., and Hildreth, D.M.: The Effect of Vegetable Fat Ingestion on Human Serum Cholesterol Concentration, Circulation 3:641 (May) 1951.
6. King, C.G.: Trends in the Science of Food and Its Relation to Life and Health, Nutrition Rev. 10:1 (Jan.) 1952.

The Seal of Acceptance denotes that the nutritional statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

American Meat Institute

Main Office, Chicago...Members Throughout the United States

To open congested air passages in hay fever

NEO-SYNEPHRINE®

HYDROCHLORIDE

. . . reduces nasal engorgement . . .

. . . promotes aeration . . . encourages drainage

A few drops of Neo-Synephrine 0.25% in each nostril will promptly check mucosal engorgement and hypersecretion, promoting greater breathing comfort over a period of several hours.

The resultant relief to the hay fever sufferer is decidedly gratifying. Prolonged action of Neo-Synephrine makes fewer applications necessary, consequently longer periods of rest and sleep are possible.

Neo-Synephrine does not lose its effectiveness on repeated application and may, therefore, be relied upon to give relief throughout the hay fever season.

Neo-Synephrine is practically free from sting and compensatory congestion; does not appreciably inhibit ciliary activity. Neo-Synephrine has been found relatively free from systemic side effects such as nervous excitation, cardiac reaction or insomnia even when tested on hypertensive, cardiac and hyperthyroid patients.[1]

Supplied in 0.25% solution (plain), bottles of 1 oz., 4 oz. and 16 oz.; 0.25% solution (aromatic), bottles of 1 oz. and 16 oz.; 0.5% solution, bottles of 1 oz.; 1% solution, bottles of 1 oz., 4 oz. and 16 oz.; 0.125 (1/8)% solution, bottles of 1/2 oz.; 0.5% water soluble jelly, in 5/8 oz. tubes.

---

[1] Von Alyea, O. E., and Donnelly, Allen: *Arch. Otolaryng.*, 49:234, Feb., 1949.

Winthrop-Stearns INC.
NEW YORK 18, N. Y. WINDSOR, ONT.

Neo-Synephrine, trademark reg. U.S. & Canada, brand of phenylephrine.

A Marked Advance in

oral estrogen therapy

no odor or after-odor

no taste or aftertaste

Now, after years of search . . . a *pure* crystalline salt of the conjugated natural estrogen, estrone.

HOW has this tasteless, odorless therapy shown in clinical trial? . . . "The facility with which dosage can be regulated . . . and the rapidity with which relief can be obtained on minimal medication are commendable."[1]

SIDE EFFECTS? From a report on 58 standardized menopausal patients . . . "Nausea was extremely uncommon, being observed in only . . . one patient on Sulestrex."[2]

ESTHETIC? "The annoying urinary taste and odor, sometimes found in natural conjugated estrogen, is not present."[3] Make *your* test of SULESTREX—soon. Available in Tablets and Elixir.

Abbott

SULESTREX® Piperazine

(Piperazine Estrone Sulfate, Abbott)

1-1878

1. Reich, W. J. et al. (1951, A Recent Advance in Estrogenic Therapy. I. Amer. J. Obst. & Gynec., 62:427, August. 2. Perloff, W. H. (1951), Treatment of the Menopause. II. Amer. J. Obst. & Gynec., 61:670, March. 3. Reich, W. J. et al. (1952), A Recent Advance in Estrogenic Therapy. II. Amer. J. Obst. & Gynec., 64:174, July.

WHEN DIETARY SUPPLEMENTATION IS NEEDED...

what more could a supplement provide?

If the concept of an ideal dietary supplement could be formulated, it might well be one that provides qualitatively every substance of moment in human nutrition. It would provide those for which human daily needs are established as well as others which are considered of value, though their roles and quantitative requirements remain unknown.

How Ovaltine in milk approaches this concept, and how well the recommended three glassfuls daily augment the nutritional intake, is shown in the appended table. The two forms of Ovaltine available—plain and chocolate flavored—are closely alike in their nutrient values.

THE WANDER COMPANY, 360 N. MICHIGAN AVE., CHICAGO 1, ILL.

Ovaltine

Three Servings of Ovaltine in Milk Recommended for Daily Use Provide the Following Amounts of Nutrients

(Each serving made of ½ oz. of Ovaltine and 8 fl. oz. of whole milk)

MINERALS		VITAMINS	
*CALCIUM	1.12 Gm.	*ASCORBIC ACID	37 mg.
CHLORINE	900 mg.	BIOTIN	0.03 mg.
COBALT	0.006 mg.	CHOLINE	200 mg.
*COPPER	0.7 mg.	FOLIC ACID	0.05 mg.
FLUORINE	3.0 mg.	*NIACIN	6.7 mg.
*IODINE	0.15 mg.	PANTOTHENIC ACID	3.0 mg.
*IRON	12 mg.	PYRIDOXINE	0.6 mg.
MAGNESIUM	120 mg.	*RIBOFLAVIN	2.0 mg.
MANGANESE	0.4 mg.	*THIAMINE	1.2 mg.
*PHOSPHORUS	940 mg.	*VITAMIN A	3200 I.U.
POTASSIUM	1300 mg.	VITAMIN B_{12}	0.005 mg.
SODIUM	560 mg.	*VITAMIN D	420 I.U.
ZINC	2.6 mg.		

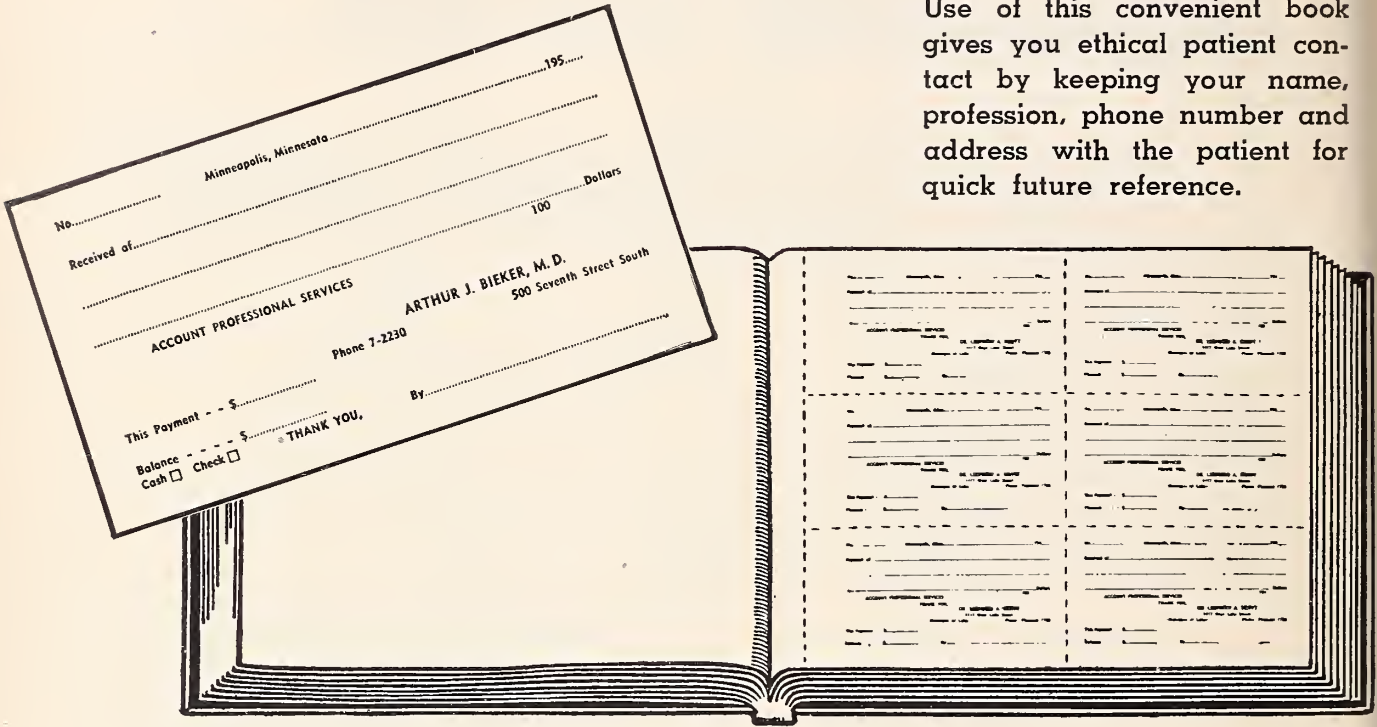
*PROTEIN (biologically complete)	32 Gm.
*CARBOHYDRATE	65 Gm.
*LIPIDS	30 Gm.

*Nutrients for which daily dietary allowances are recommended by the National Research Council.

To Save Time and Money . . .

USE P&H DUPLICATE-SIX RECEIPT BOOK

Use of this convenient book gives you ethical patient contact by keeping your name, profession, phone number and address with the patient for quick future reference.



No.................... Minneapolis, Minnesota..............................195......

Received of...

....Dollars

100

ACCOUNT PROFESSIONAL SERVICES

ARTHUR J. BIEKER, M. D.
500 Seventh Street South
Phone 7-2230

This Payment - - $....................

Balance - - - - $....................

Cash ☐ Check ☐

THANK YOU.

By..

The Personalized Duplicate-Six Receipt Book is handy and simple to use. Each book contains 504 white receipts with the doctor's name, profession, address and phone number and 504 yellow duplicates. There are 6 receipts to the page, slot hole perforated for easy detachment. The book lies flat when opened. Size of the book is 8½" x 11" to fit into desk drawer or cabinet; size of individual receipts is 3" x 5". Two sheets of full-size carbon paper are included in each book.

NOTE: When ordering, please be sure to give name, profession, address and phone number, which will be printed on each of the 504 white receipts. Order a supply of M-753a P & H Duplicate-Six Receipt Books now.

PRICES

1 Book	$ 3.95
2 Books	5.50
3 Books	7.65
5 Books	11.45
10 books	19.95

distributed by

PHYSICIANS AND HOSPITALS SUPPLY CO., Inc

1400 HARMON PLACE, MINNEAPOLIS 3, MINNESOTA

1 *to escape pollens*

2 alternatives for the hay fever patient

2 *to relieve symptoms*

Pyribenzamine®
hydrochloride
(tripelennamine hydrochloride Ciba)

Once atop Pike's Peak, your hay fever patient can enjoy freedom from pollens. But for patients who must remain in a high-pollen environment, you can institute this effective therapy: one or two Pyribenzamine tablets, 3 or 4 times daily.

Alone and as an adjunct to desensitization, Pyribenzamine has proved effective in relieving hay fever symptoms, as evidenced by thousands of published case reports. On the basis of this evidence, no other antihistamine combines greater clinical benefit with greater freedom from side effects.

For your prescription needs, Pyribenzamine 50 mg. tablets are available in bottles of 100 and 1000 at all pharmacies.

Ciba *Ciba Pharmaceutical Products, Inc., Summit, N. J.*

2/1920M

'Carbo-Resin' Therapy Simplifies Control of Edema

- Permits more liberal salt intake, enhances palatability of diet
- Safely removes sodium from intestinal tract and prevents its reabsorption
- Decreases the frequency of need for mercurial diuretics by potentiating their effectiveness
- May be lifesaving therapy for patients who have developed a resistance to mercury
- Useful in congestive heart failure, cirrhosis of the liver, edema of pregnancy, hypertension, or whenever salt restriction is advisable

Eli Lilly and Company
Indianapolis 6, Indiana, U. S. A.

Suspended in orange juice

Lilly

Baked into brownies or cookies

Blended into gelatin dessert

Variety is the key to palatable 'Carbo-Resin' therapy.

'Carbo-Resin,' Unflavored, may be incorporated into cookies, fruit juices, and desserts. Printed recipes for your patients are available from the Lilly medical service representative or direct from Indianapolis. A book containing low-sodium diets is also available for distribution to patients.

CAUTION: 'Carbo-Resin' is supplied in two forms—flavored and unflavored. Only 'Carbo-Resin,' Unflavored, is suitable for incorporation into recipes.

POWDER

'Carbo-Resin'

(CARBACRYLAMINE RESINS, LILLY)

Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 36 July, 1953 Number 7

ST. JOSEPH'S HOSPITAL
1853-1953

ROBERT ROSENTHAL, M.D.
Saint Paul, Minnesota

ANY INSTITUTION may be justly proud of a full century of unselfish devotion to the cause of humanity. This is especially true of an organization which began in a small, humble manner and, despite obstacles and periods of intense difficulty, persisted in growing with its community and in meeting demands made upon it.

With the exception of the military hospital at Fort Snelling,[1] St. Joseph's Hospital is the oldest institution dedicated to healing in Minnesota. St. Joseph's, for one hundred years, has served not only the thriving city of Saint Paul, but has also extended its benefits to the surrounding country. From the time when the great St. Croix valley was the mecca of lumberjacks to the present when a town has become a city and a wilderness valley has been transformed into a rich agricultural area, St. Joseph's Hospital has stood strong and steady to minister to the hurt and the sick.

The story of those four sisters of the Order of St. Joseph of Carondelet who had come to Saint Paul to teach the alphabet and to perpetuate the faith is well known. The names of Mother St. John Fournier, Sister Philomena Vilaine, Sister Francis Joseph Ivory, and Sister Scholastica Vasques are an imperishable symbol of man's humanity to man and form the very foundation stones of the institution we know as St. Joseph's Hospital. These nuns, together with His Grace Bishop Joseph Cretin—spiritual rector and philanthropist—these devoted servants of the Church recognized the need for a hospital in Saint Paul.

This need had become evident before 1853. The early 1850's in the North Country was a period of great immigration. Thousands of men and women and children disembarked from river boats at Saint Paul's lower landing to make new homes for themselves in a territory that soon was to become a state. Among these early arrivals was Dr. John Day.[2] His, perhaps, was the earliest vision for a hospital. Day even reached the point of securing a site and fencing it in. He purchased building materials and caused them to be hauled to the chosen location. But he never realized his dream, and when he knew that he could not go forward with his plans, he disposed of lot and materials to Bishop Cretin. And it was the Bishop who undertook to raise the structure, a four-story stone building that was begun early in 1853.

The erection of this hospital was no easy task in a frontier community. Saint Paul's population numbered less than 1,500 in 1853. The territory of Minnesota was sparsely settled, too. No railroad crossed the land. Goods and supplies had to be transported by ox carts, by stages, or on the

---

The writer of this history leaned heavily upon the excellent history of St. Joseph's Hospital by Dr. John M. Culligan and Dr. Harold J. Prendergast, "St. Joseph's Hospital in St. Paul," published in *Acta et Dicta*, Vol. VI, 1934, the "History of Medicine in Ramsey County" by Dr. John Armstrong, MINNESOTA MEDICINE, October, 1938 through October, 1939, and "The Asiatic Cholera in St. Paul" by the same author, MINNESOTA MEDICINE, December, 1942 through February, 1943.

[1] In 1855, the Christ Church Orphans' Home and Hospital opened on Park Place. After being closed for a period, it reopened in the early 60's and later reorganized as St. Luke's Hospital. Prior to 1870 St. Joseph's and St. Luke's Hospitals were the only hospitals in St. Paul. The Free Hospital for the Poor established about 1860 under the auspices of St. Paul's Episcopal Church was rather a home for infirm aged than a hospital. The City and County Hospital was opened in 1882.

[2] "The Catholic Church in the Diocese of St. Paul" by James Michael Reardon, P. A., 1952.

waterways.[3] But water routes were open only from late spring until the beginning of grey winter. Saint Paul certainly was a real frontier community, endowed with all the shortcomings and hardships of the primitive settlement, but also infused with the enthusiasm and hope that characterized the American West.

Under these pioneer conditions, Bishop Cretin raised his hospital in one and a half years. When, in the early months of 1853, His Grace laid the cornerstone, he was not quite certain in his own mind whether the building to come would house a hospital or a college.[4] It would be a hospital if sufficient sisters could be found to nurse the sick; it would be a college if nursing sisters were unavailable. Either way, the institution would serve a human need.

The question of hospital or college must have been answered toward the close of 1853, for in November the *Minnesota Pioneer* published a short business directory. This directory included "One Catholic Hospital," which, it cannot be doubted, referred to St. Joseph's. (The directory, you may be interested to know, also listed three newspapers, seven churches, fourteen physicians, two dentists and—two wholesale liquor stores.) Another issue of the *Pioneer* in the same month described the Catholic Hospital as a "large stone edifice near the Capitol built for the Sisters of Charity. It is not yet finished, but is nearing completion." By the beginning of winter in 1853, the building was enclosed and roofed. It appeared so large and ample that some individuals felt it could provide space not only for the hospital, but also for an orphan asylum and a separate and independent novitiate for the Sisters. Construction slowed during the heavy winter months and when spring came the structure still was not completed.

The first dramatic need for St. Joseph's came before accommodations were available. The Asiatic cholera made its appearance in Saint Paul. The disease was not entirely unknown, for sporadic cases had been seen and reported in 1849. But it was in 1854 that cholera attained almost epidemic proportions. In spite of the silence of newspaper editors, Saint Paul citizens knew what was transpiring and were apprehensive. A Board of Health was established, but very little is known of its deliberations and actions as only one report—that of June 11, 1854—has been preserved for us. Perhaps Saint Paul newspapers intentionally soft-pedaled the seriousness of the cholera epidemic in order not to interfere with the active immigration of the time.

No building was available in which to house victims of the disease. Bishop Cretin, therefore, proposed to the Board of Health that "the city could have the use at a reasonable expense, of ample apartments in the hospital now in process of erection under his superintendence as soon as it was finished, which he thought would be by the first of July." The need, however, was immediate, and an old log church on Bench Street, the original Chapel of Saint Paul which was erected in 1841 and which was being used as a school, was transformed into a small cholera hospital. We might, therefore, look upon this revered little log building as the real origin of St. Joseph's Hospital.

The makeshift hospital on Bench Street "scarcely sufficed for the wants of the neediest among the sick, and the generous labors of the Sisters of Charity were restricted."[5] Saint Paul, therefore, must have been unusually joyful when the new building was dedicated solemnly on September 19, 1854, and when it was promised that the hospital would be opened early in October.

The hospital was situated on Ninth Street, "on a beautiful plateau planted with trees." It possessed a "commanding view of the city and of the Mississippi River."[6] The hospital's location was described as "the most healthy and beautiful." Dr. Day had chosen the site well, for it was on a plateau high enough to rise above an area of swampy land bounded by West Fourth Street, Pleasant Avenue, St. Peter Street, and Ninth Street. A brook running from Rice Street passed near the hospital to angle off toward Seven Corners.

Photographs of the late 1850's and early 1860's show that St. Joseph's possessed a fourth story, which contemporary accounts sometimes referred to as the attic. This original building occupied the location of the main structure of the present institution. Here in this first hospital were arranged the early floor-plans. In the basement were utility rooms, the kitchen, a dining room for hired help, and the laundry. A vegetable cellar was handy. In addition to a parlor, community refectory, assembly rooms, and chapel, the first floor also had two wards. On the second floor were a ward for men and another for women, two private rooms, and a drugroom. Up a flight of stairs were to be found wards for women and the Sisters' dormitory. And the fourth or attic floor was reserved for mental cases (usually delirium tremens), but included also ward space. Along the front of each of the first three stories ran a porch. Two small brick buildings—one to the southeast and another to the southwest—served from time to time a variety of purposes: school, doctor's residence, contagion wards during epidemics, morgue, and ice house.

---

[3] The railroad came as far as Galena in 1854 and did not reach Saint Paul until about ten years later.

[4] Bishop Cretin had been designated Bishop of Saint Paul in 1851. It is believed that he contributed financially to the building of the hospital because he had received 10,000 francs from his family in France and there is no official knowledge or record of what he did with his money.

[5] *Minnesota Democrat*, September 20, 1854.

[6] *Weekly Pioneer and Democrat*, February 17, 1859, and Saint Paul City Directory, Newson and Barton Publishers, Saint Paul, 1858-1859 . . . Hospital of St. Joseph's.

This brand-new institution, although primitive by today's standards, was thought most modern in those far-away days of the 1850's. Comment was made on the hospital's neatness, its orderly arrangement, its air of comfort, its healthy cleanliness. And wonder of wonders—there were bathrooms on each floor.[1] Citizens of Saint Paul were most impressed, but the plain truth is that water was carried to each floor by means of a force pump of the antique type used on old fire engines.[7] It took four sisters to supply the force —and back-breaking work it was. Such were "modern" conveniences in the mid-nineteenth century!

An 1855 report tells that nine patients were being cared for in St. Joseph's and affirms that care was most satisfactory. The hospital was praised as a "work of charity and benevolence, which stands out in bold relief, a monument to the projector, of faith, hope, and good will to all mankind." This was as it should be, and the same words could well be applied to St. Joseph's today.

One of the curious sidelights of this story of a great hospital concerns a school for girls which was attached to the hospital and which opened on January 1, 1855. Apparently a brick building had been erected near the southeast corner of the hospital between 1853 and 1855. This was the school which was giving instruction to thirty pupils by February, 1855. The hospital itself was caring for the same number of orphans, the largest group of this type in any of the several institutions managed by the Sisters of St. Joseph.

It is a little difficult to find reliable figures as to the number of patients in the hospital in this pioneer period, but it is known that poor patients were received as far as money permitted and that a "skillful physician will visit the hospital at least every other day." Apparently, only one physician was in charge of the hospital at a time. The physician referred to here was Dr. S. Willey. Private patients, of which there were relatively few, paid eight dollars a week. This eight-dollar fee for a private room included physician's care, nursing by the sisters, medicines, and, of course, fuel and light.[8] This charge was considered reasonable even for the year 1855. Although St. Joseph's attempted to be incorporated, such an action did not become a reality until forty years later.

In 1855 cholera again was present in Saint Paul. Perhaps the number of cases even increased over those of previous years. Be that as it may, St. Joseph's hospital, as always, was the place to which victims of the dread disease were carried. A cholera victim, said a newspaper, was turned out of his hotel and put unceremoniously down on the inhospitable pavement. Eventually, the patient was removed to a physician's office and from there to "the hospital," which no doubt was St. Joseph's.[9] The wife of Dr. S. Willey remembered that a river steamboat came to dock with eleven victims of cholera. These unfortunates were loaded on wagons to be taken to St. Joseph's. It was ill luck, indeed, that these primitive ambulances had to pass through a swamp, where one of them mired down. Before it could be released, two patients died.[10]

Cholera patients were not sufficiently numerous during the months to come to keep the hospital supplied with ill human beings and, it must be said, relatively few individuals ill from other diseases came to be nursed. These were the days when hospitals were still suspect and when the average citizen preferred to remain at home when he was sick. Consequently, Bishop Grace and the hospital trustees decided in 1859 that "the interest of the hospital would be served by a temporary removal from the hospital building to those now occupied by the Sisters of St. Joseph."[11] This decision was determined upon in part because city and county patients who previously had been sent to St. Joseph's Hospital now were being cared for elsewhere.[12] Consequently, the log buildings on Bench Street (one of them the chapel) were put to use as hospital units. The building on Vine Street was turned into a school and opened in September, 1859, as St. Joseph's Academy for Young Ladies. Sixteen boarders and forty day pupils were registered during the autumn of 1859.[13] Although the St. Joseph's Hospital building was not used for hospital purposes, it must be pointed out that the *Minnesota Pioneer and Democrat* of July 12, 1860, published a statement saying that the institution still cared for "invalids of every nation and faith" and added that the Sisters always were ready to care for transients who had the misfortune to become ill. Thus, you see that the hospital situation was considerably confused.

---

[7] *St. Paul Pioneer* of January 26, 1855, and *Minnesota Democrat* of February 14, 1855.

[8] *Minnesota Democrat,* February 14, 1855.

[9] "The Asiatic Cholera in St. Paul," by John M. Armstrong, MINNESOTA MEDICINE, January, 1943, p. 110.

[10] "The Asiatic Cholera in St. Paul," by John M. Armstrong, MINNESOTA MEDICINE, January, 1945, p. 112.

This confusion was compounded during the next three years when the building of St. Joseph's Hospital was used to house the Sisters and, it may be said, that some patients were received and cared for. There is evidence of this in the form of a city council action which approved a bill for payment for the care of patients, but a council action of the same time affirmed that "in general, patients shall be sent to the County Poor Farm."

The date of October, 1863, however, brings a termination to the confusion of functions. It was then that the hospital moved back to the original building. This building has not been closed from that day to this. Slight changes were made in certain rules and regulations. For example, prices were set at five dollars a week for a private room and three dollars for a ward bed, but these charges did not include medicines and medical care. Patients now were given the privilege of choosing their own physician.

In December, 1863, a new structure appeared. This had been put under construction two years previously and was to house St. Joseph's Academy. The two cabins on Bench Street were abandoned. Thus, to make the picture perfectly clear, there were three buildings, each with a specialized function: St. Joseph's Hospital, St. Joseph's School, and an orphanage.

Although I have no desire to interpret the role of cholera as that of a hero, it is perfectly true that this disease, from time to time, did stimulate the activities of St. Joseph's Hospital. Such was the case in 1866, when once again the cholera came to Saint Paul. The city fathers, attempting to determine where these unfortunate victims might best be treated, thought for a time to erect a hospital, but better wisdom prevailed. It was decided to ask St. Joseph's Hospital to accept them. Under the leadership of Drs. Willey and Stewart, this plan almost materialized.[14] Unfortunately, residents close to St. Joseph's objected strenuously, even threatening to burn the institution if cholera patients were admitted. As a result, a quarantine station was built in Pig's Eye.[15] The entire situation, however, was favorable to St. Joseph's, for it brought the institution to public attention.[16]

After the Civil War, the services of the hospital were in more and more demand. A west wing was added in 1878, and this wing is the oldest portion of the building as it stands today. This is true because the original structure was torn down in 1893 and rebuilt in 1895. The east wing was added in 1885. Other innovations included a separate laundry building and the use of the Lick House by the Sisters who were teaching at St. Agatha's Conservatory. This Lick House, it may be said, had quite an unusual history. It was believed to be haunted as the result of a murder. The Sisters, however, took ghost-ridden houses in their stride and lived in this one until 1884.

---

[11] Quoted from "History of Medicine in Ramsey County," by John M. Armstrong, MINNESOTA MEDICINE, February, 1939, p. 110.

[12] The information is very indefinite as to where they were cared for, but as two years previously sixty acres of land had been purchased at Pig's Eye for a County Farm, it is assumed that this may have been the place where these patients were taken.

[13] "On Good Ground; the Story of the Sisters of St. Joseph in St. Paul," by Sister Helen Angela Hurley, 1951.

[14] Dr. Jacob Henry Stewart had come to Saint Paul in 1855 and very soon became a very popular physician. He was the first president of the newly organized (1856) Y.M.C.A. and county physician from 1856 to 1857. He was State Senator from 1859 to 1860 and Surgeon General of Minnesota from 1857 to 1863. He was Mayor of St. Paul in 1864, 1871, and 1873 and Postmaster from 1865 to 1870. Later he was associated with Dr. Charles Wheaton. He died in 1884.

[15] On August 21, the newly organized Board of Health reported that two buildings, 24 by 30 feet and 30 by 30 feet respectively, were almost finished to provide a quarantine station and that furnishings and drugs would be sent there the same day. Three days later, Dr. Charles Smith who had just come back after serving his internship, was made assistant to Dr. Thomas R. Potts, the newly elected city physician and health officer, and put in charge of these two buildings. By this time, however, the relatively mild epidemic had spent itself.

[16] After this outbreak, only very occasional cases were reported in Saint Paul, the last one in 1873, a case seen by Dr. Samuel Flagg and Dr. Stewart.

After many delays, the incorporation of St. Joseph's Hospital took place on April 16, 1895.[17] By then the staff of Sisters had increased considerably, and the institution was ready to modernize itself as modernization was known in the decades before 1900.

Medical teaching, begun in these early decades, always had been a firm objective of St. Joseph's. Thus it looked with favor upon the Saint Paul School for Medical Instruction which functioned from 1871 to 1879 and which later became the Saint Paul Medical School, which existed from 1885 to 1888. These medical schools used St. Joseph's Hospital for teaching medical students. A residency for an intern at St. Joseph's was established in 1885. By then a large amphitheater in the operating room had been constructed for the convenience of students. Since those early years, well over 350 medical students have received medical teaching at the hospital. The first intern was one whose name looms large in the medical history of the state.

Dr. Arthur A. Gillette was that intern of 1885, and he was destined to become one of the outstanding orthopedists in Minnesota. In 1895, he began his remarkable career as a medical educator at the University of Minnesota as instructor, clinical professor, and full-time professor of orthopedics, and finally as head of the orthopedic division. During his full life, he became president of just about all the Minnesota societies of which he was a member. The Gillette Hospital for Crippled and Deformed Children is an everlasting monument to his foresight as well as a pioneer achievement, for when it was built it was the first institution of its kind in the United States. "Success comes to many as it came to him, but success with distinction is won, as he won it, by few."[18]

St. Joseph's second intern was Dr. Harry J. O'Brien, who served in 1886. Like Dr. Gillette, Dr. O'Brien was destined to make medical history. With the assistance of Mother Bernardine Maher, Dr. O'Brien in 1894 established a school of nursing. For many years this school profited by his abilities as medical director and as lecturer. From Dr. O'Brien's experiences in teaching nursing came a text entitled "Medical and Surgical Nursing." Published in 1900, this volume approached nursing from the point of view of the physician and surgeon. It was a guide for graduate and student nurses and was full of practical wisdom including instruction in the art of cooking for the sick. Certain chapters were contributed by outstanding members of the medical profession of the day. When Dr. Burnside Foster reviewed O'Brien's volume in the *Saint Paul Medical Journal* for August, 1900, he wrote: "While we cannot say that the book contains all that the trained nurse should know, it certainly contains very little that she should not know, and in this respect it is to be preferred to most of the text books for nurses which we have seen and which contain a vast amount of information and instruction which is superfluous."

In addition to compiling his text on nursing, lecturing to nurses, and acting as medical director of the school of nursing, Dr. O'Brien was one of the outstanding surgeons of St. Joseph's Hospital. He was most generous to members of the medical profession. It is to be remembered that he presented the hospital with a horse-drawn ambulance when such vehicles were indeed a luxury. Dr. O'Brien died in 1931.

Of the twenty-nine young men who interned at St. Joseph's prior to 1901, there is at least one who is still practicing. He is Dr. George E. Sherwood of Kimball, Minnesota. Dr. Sherwood interned in 1894 and then practiced in Dassel for a few years. From there, he moved to his present location, where he has practiced for half a century and where the people of the community tendered him an enthusiastic celebration in appreciation of decades of unselfish labor. It is a pleasure to report that Dr. Sherwood is hale and hearty, that he travels a great deal, and that he still takes care of his practice.

When Dr. O'Brien helped establish the school of nursing in 1894, he could not know of the far-reaching influence of his work. The first class of sixteen nurses was graduated on July 7, 1896. Of this number, ten were nuns. Diplomas were given the graduates by Archbishop John Ireland, who is becoming known today as one of the great prelates of the Church of the United States. The Archbishop was assisted by Dr. Charles L. Smith. Archbishop Ireland, in the well-chosen words for which he was noted, commented upon the progress made by the hospital during the past quarter of a century and paid tribute to those physicians who cared for the sick and to whom the "hospital owed its prosperity of the present time in a manner." He enlarged upon the advances made in medicine, stressing the fact that medical science was paying more attention to the *vis medicatrix naturae* and leaning more toward expectant treatment. Archbishop Ireland compared the work of physicians with that of nurses and said that frequently the labors of devoted nurses were the more important. He admonished nurses, however, to realize that their studies were not completed just because they had finished a course and were being graduated. He cautioned them to continue to observe and thus to learn. In a relatively brief talk, Dr. Smith spoke of the duties of nurses, of the importance of tact, and of the necessity of medical confidence. The exercises were concluded with a literary and musical program.

---

[17] The articles are reprinted "St. Joseph's Hospital in St. Paul," by Dr. John M. Culligan and Dr. Harold J. Prendergast, 1934.

[18] Memorial to Arthur J. Gillette, MINNESOTA MEDICINE, Vol. IV, 1921.

St. Joseph's Hospital, recognizing the imperative need for nurses who were well trained, extended the length of the training course to three years before 1900. It was the first of many western hospitals to do so. Thus, once again, St. Joseph's was a leader, making the way for other institutions to follow.

During the years, some 2,285 nurses have been graduated from the institution. In 1942, the school of nursing of St. Joseph's was incorporated into the Department of Nursing of the College of St. Catherine. Under this merger, students may enter a three-year course which gives them a diploma or select a four-year program which results in the degree of Bachelor of Science. This latter course puts special emphasis upon training in the basic sciences. Clinical experience is provided either at St. Mary's Hospital or at St. Joseph's.

Although a few of the distinguished physicians who were connected with St. Joseph's have been mentioned, it would be most unfair to conclude even a brief summary of a great healing institution without mention of some of the earliest outstanding practitioners closely connected with the hospital or without reference to a few of the techniques that were introduced.

Dr. Samuel Willey, mentioned earlier, was one of the top medical men during Saint Paul's years of growth. Born in Boston, he attended Yale Medical College, and in 1850 was graduated from the Cleveland Medical College. He immediately secured a position at the Ohio Hospital for the Insane. There he remained, except for a brief period in Cincinnati, until he came to Saint Paul in October, 1852. There is a story told—although I cannot vouch for it—that Dr. Willey stepped off the steamer at Saint Paul's landing with only fifty cents in his pocket. But this poverty was not to be his for long. He associated himself with Dr. Brisbine and soon was one of the most popular physicians of his day. Though not present at the organizational meeting of the Minnesota State Medical Society, Dr. Willey was counted among the charter members by request. Through the years, he demonstrated great interest in the foundation of this society and worked conscientiously for its success. In 1869, when the society was reorganized, Dr. Willey was elected president and was re-elected the following year. In 1870, he was elected a vice president of the American Medical Association. Dr. Willey exerted great influence upon the policies of the Saint Paul Academy of Medicine, which had been founded in 1860. It is interesting to note that Dr. Willey's large practice and his poor health led him to introduce several innovations which we consider to be perfectly usual today. He was the first physician in Saint Paul to stop compounding his own medicines, to establish regular office hours, and to employ an agent to collect overdue bills. Dr. Willey retired in 1871 and died in November of the following year.

There were three other physicians whose services were important to St. Joseph's Hospital during the first year or two. These were Drs. Albert C. Brisbine, James Dinsmore Goodrich, and O. P. Marsh.

Dr. Brisbine was born in the Buckeye State at New Lisbon (now Lisbon) in 1825. He did not remain long in his native Ohio, however. After being graduated from Jefferson Medical College, he emigrated to Saint Paul, arriving in 1851. He was a founder of the Minnesota State Medical Society and of the Ramsey County Medical Society. He was first associated with Dr. Willey and later with Dr. E. J. Abbott and Dr. Clinton C. Miller. He died as the result of a fall in 1887.

The second prominent physician, Dr. Goodrich, had been born in Ripley, New York, in 1820, and had practiced in Cleveland before coming to Minnesota for his health in 1851. Thus he and Brisbine arrived the same year. There was a difference between the two men. Whereas Dr. Brisbine entered practice immediately after settling in

Saint Paul, Dr. Goodrich tried his hand as a sailor on the Great Lakes and did not begin practice until 1852 or 1853. He became the first health officer and the first city physician of Saint Paul and was named coroner in 1857. He left the city in 1859, after having been associated with Dr. Marsh. Two years later Dr. Goodrich died.

Although Dr. Marsh was the least prominent of the early attending physicians at St. Joseph's Hospital, he was a man of repute. He had come to this community in July, 1853. At the organizational meeting of the Minnesota State Medical Society, he was marked present by request. Although he is mentioned as a member of one of the Society's committees in 1856-57, he may have left the city before that.

As the years passed by and Saint Paul emerged from the role of a primitive community to a great urban center, practically all the outstanding physicians brought patients to St. Joseph's, and outstanding feats of medical history were performed. Dr. Justus Ohage, for example, performed the first cholecystectomy in the old operating room on the top floor of the east wing on September 24, 1886. This was the first successful operation of its kind in the United States. The patient outlived the operation for about forty-two years. Dr. Ohage's success was reported in the *Medical News* of February, 1887.[19] Prior to Dr. Ohage's attempt at St. Joseph's, this type of operation had been performed only eight times in Europe and with only one fatality. It is fitting, therefore, that St. Joseph's Hospital should have a bronze plaque commemorating the event in the lobby.

There were other noteworthy operative procedures. Dr. Arnold Schwyzer removed the entire transverse colon and repaired the torn superior and inferior mesenteric veins in 1898 in a case of intestinal obstruction by a pancreatic tumor.[20] This may have been the first performance of such an extensive resection of colon. And, it must not be forgotten that Dr. Schwyzer's operation was remarkable also by the very early use of a transfusion of physiologic salt solution to combat loss of blood.

On November 10, 1903, Dr. Schwyzer again made medical history and again made it at St. Joseph's. He performed what seems to have been the first bronchoscopy in America with a bronchoscope. He used a Killian instrument which he had obtained in Europe the previous summer and successfully removed a bone lodged in the right bronchus. His patient had a large goiter which had to be resected before the bronchoscopy, which was then performed through a tracheotomy wound.

It is important to remember also that Dr. Fred J. Plondke, a staff physician, introduced the use of spinal anesthesia. He used Stovain, which he had brought from Europe, in almost thirty cases between 1905 and 1906. Although a pioneer in this work, Dr. Plondke was forced to abandon it because Stovain could not be procured. Some twenty years later this method of anesthesia was revived.

Scientific apparatus and methodology kept pace with innovations in medicine and surgery. The first laboratory was set up in 1902 by Dr. James Ferguson in a meagre space located under the stairs which lead from the ground floor to the east wing. This early laboratory centered around a microscope, although Dr. Ferguson furnished in addition a microtome and a homemade atomizer utilizing ether to freeze sections. The next home of the laboratory was on the fourth floor,[21] and then in 1905 it was taken to the basement of the east wing and materially enlarged under the direction of Dr. Fred C. Schuldt.[22] In February, 1919, the laboratory once again took up its abode on the fourth floor in order to be closer to operating rooms.

St. Joseph's first x-ray machine, a motor-driven static model, was installed by Dr. Arthur Miller in 1902, only a few years after the x-ray had come into use in the city. About 1907, the department of x-ray and static electricity was moved to the ground floor. It was not until 1911, however, that a first-class x-ray, consisting of a 4 kilowatt Snook transformer with Keleket tube stand and table and a "stereoscopic illuminator,"[23] was installed. This equipment was located on the fourth floor near the laboratory, where it remained until about 1922 when the x-ray department was renovated and reorganized and, in the process, was moved to the north wing. In 1907 or 1908, St. Joseph's could also boast of a Turkish bath on the ground floor. In 1912, a Draeger pulmotor was added to the hospital equipment. This pulmotor was lent to any physician who needed it in his private practice.[23] Not until the 1920's were the operating rooms rearranged and remodeled. At this time, special space was provided for the exclusive use for surgery of the eye, ear, nose, and throat, and for cystoscopy. At this time, a special record room was established. The entire physical plant of St. Joseph's, indeed, had changed drastically since the early days. For example, a boiler house, providing some isolation rooms, went up in 1904; in 1915 the laundry and power house went into more ample quarters; the north wing was constructed in 1922; and the present home for nurses was completed four years later. In more recent years, the pediatric department, which originally began in one room on the second floor of the main building, was transferred to the west wing, where it occupied the entire first floor. The medical library, starting in the small space vacated by the pediatric department, was relocated in 1949 next to the Staff Hall. It now has over 4,000 volumes, including files of bound journals. Today, it serves doctors, interns, nurses, and all hospital departments with regularly received medical journals to the number of seventy and with some thirty educational and recreational magazines.

---

[19] "The Surgical Treatment of Disease of the Gall-bladder," *Medical News,* II:202-206 and 233-236, February 19 and 26, 1887.

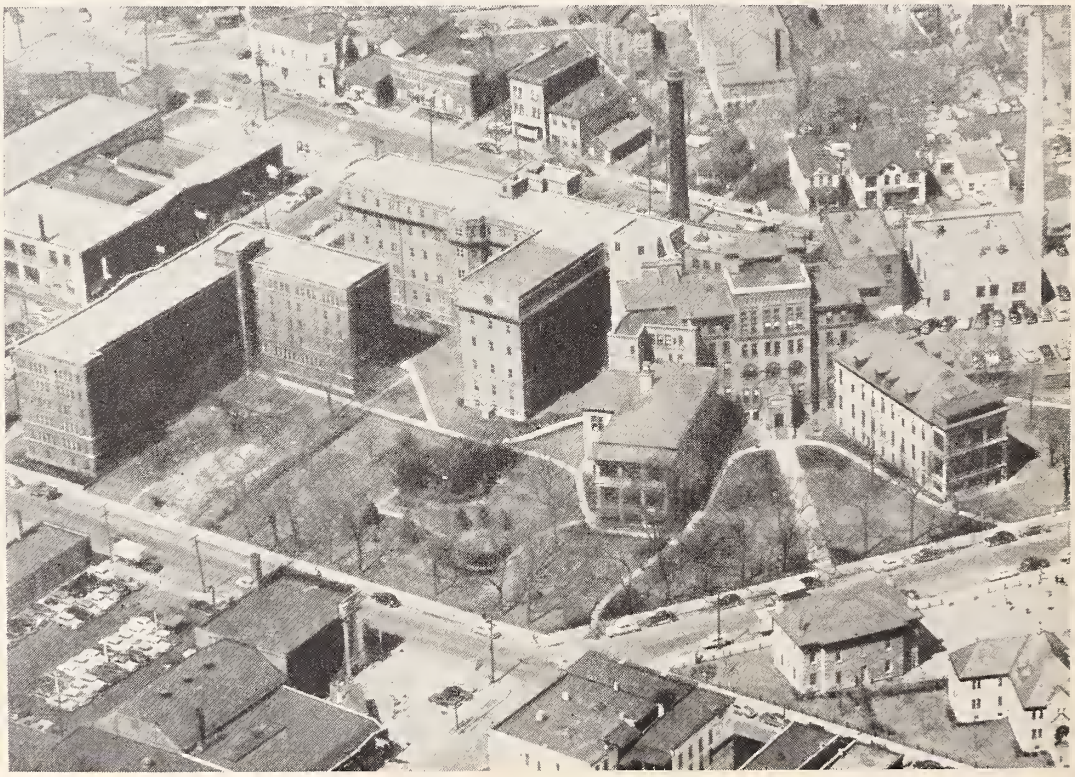
[20] "Removal of the whole transverse colon and partial resection of the pancreas and large curvature of the stomach for carcinoma, with lateral suture of the superior and inferior mesenteric veins." *St. Paul Medical Journal,* I:162-175, 1899, (three illustrations).

[21] 49th Annual Report of St. Joseph's Hospital for the year 1901 (1902).

[22] 52d Annual Report (1905).

[23] 58th Annual Report (1912).

St. Joseph's Hospital always, whether the pace was slow or rapid, has moved forward and always has sought to serve the community in the best possible manner. But the need for enlargement is ever present. Not even the relatively new outpatient department, the recent remodeling of the laundry, the erection of a new power house, and the construction of new quarters for interns —not even all these—and more—advances can satisfy an institution dedicated to service and determined to advance with the times. St. Joseph's Hospital must continue to grow as it has matured during the past. Sister Edith catches the very spirit and soul of the institution when she lets the hospital speak for itself in these modest, but ringing, words: "It is a strange feeling to be one hundred years old. My brick and mortar attest my age, but I do not think my spirit does, nor that I ever will grow old and cold."[24] Yes, this is a centennial year for many institutions in Minnesota, but none of the others can look back upon such a span of service to alleviate human suffering as can St. Joseph's. All Minnesota is grateful!



St. Joseph's Hospital as it appears today.

---

[24] *The St. Joseph Square,* I: No. 1, January, 1953.

SOME PERSONAL OBSERVATIONS ON THE USE OF ROUTINE CHEST RADIOGRAPHY

RICHARD TRAIL, M.D.
London, England

I AM deeply grateful for the signal honor you have conferred on me by designating me a St. Joseph's Hospital Centennial Lecturer. Of this honor I am the more conscious because I am addressing a community which is, in the truest historical sense, a descendant of the early foundations for the care of the sick, since you administer your hospital on the prime fundamental for success, a balanced combination of the spiritual and material in the treatment of chronic illness. Your proud record in medicine and surgery shows that you have had a continuing eagerness during the past hundred years to apply every scientific advance, but that you have never forgotten that the technique of things is ultimately useless without the technique of people, for the restoration of the spirit towards the renewal of living is something above and beyond the mere application of non-human technical processes, which can never achieve more than the preservation of existence.

As you were the first private hospital in Saint Paul to use it for the examination of all admissions, I have chosen to talk on routine chest radiography. I crave your indulgence to use this opportunity to say aloud some personal thoughts on the general deductions that have been made from its broad lessons, on its future application, and on the responsibilities that appear to me to follow for the physician, the radiologist, and the epidemiologist in the field of pulmonary tuberculosis.

What are the broad lessons of routine radiography? It can disclose an abnormal lung shadow, which may prove on full investigation, clinical, laboratory and radiological, to be phthisis of any extent from early to advanced, active or inactive, for which the individual has never felt compelled to seek advice. Thus, of the first eight million civilians who were mass x-rayed from the population of England and Wales thirty-four per ten thousand males, and thirty-five per ten thousand females were considered to have, at first examination, unsuspected active disease, while roughly double that number were considered to have unsuspected inactive disease. It has shown that the majority of exudative lesions in adult life are due to previous post-primary deposits of adolescence and early adult life, which had developed and reached quiescence without the knowledge of the individual. We now know that a chest found clear of any recognizable x-ray lesion up to the age of thirty is very unlikely to develop phthisis at any future examination, and also that while there is less than the average steady over-all improvement in the mortality and morbidity of young females, in males there is a progressive forward shift of mortality into age groups over forty-five. In our realization that no one over the age of forty with symptoms of chronic bronchitis should be labelled as such until he has been proved definitely non-tuberculous we have learned much about the sources of infection in young adults, and in particular in those closely exposed to contact, such as nurses and medical students. A study of the histories of unsuspected active cases has taught us that the evidence of morbidity progresses from the symptomless stage to the stage of systemic disturbance, in most cases in the order from cough to dyspnea on exertion, lassitude, loss of weight, pain, dyspepsia, night sweats and hoarseness. But routine radiography has done something which I consider even far more important to humanity. It has turned our thoughts towards a fuller understanding of the origin of many chronic illnesses, towards new ideas in the prevention of morbidity through the prevention of that breaking of the spirit that so often precedes it.

These broad lessons have had marked effects on the attitude towards prevention, diagnosis and treatment. The honesty of the chest physician has recoiled on himself. Because he knew that in its early stages a progressive disease can be a silent pneumonic process, possibly established for weeks or months before the sufferer is aware of its subjective and systemic effects, he pleaded for the introduction of routine x-ray examina-

---

Read at the Centennial observation of the founding of St. Joseph's Hospital, Saint Paul, Minnesota, May 16, 1953.

tion of the supposedly healthy. He knew that to wait for added sounds, which the general practitioner had been taught to consider as the only finding to emerge from physical examination, was to wait in a large majority of cases for established fibrosis and cavitation. In records of patients seen between 1924 and 1933, I found over 20 per cent with a history of inefficiently treated hemoptysis or pleurisy three to five years before the appearance of positive sputum, which had apparently been taken as the only indication for the commencement of treatment. The anxiety for earlier diagnosis has had its reward, but with the result that the standing of the radiologist has been advanced in proportion as that of the chest physician has receded in the opinion of the public and of the general practitioner, while all three, practitioner, radiologist, and the lay public alike, have failed so far to realize the new problems of the chest physician over the disposal of the individual with an abnormal film. Meantime we have heard epidemiologists, alarmed at the discrepancy now disclosed between notification and incidence, demand that the law should enforce attendance at all public and special sessions for mass x-ray surveys, and should follow this with the compulsory segregation or isolation of every individual proven to have active disease. Others, recognizing that this new method has raised fears, both true and imagined, among nurses in sanatoria, have pleaded that it should not be extended unless we can give adequate hospitalization, which is already impossible for some 75 per cent of those known to require it.

For the trends against himself the chest physician must bear some of the blame. For years he had been undermining his own position. By his increasing reliance on serial x-rays for the conduct of treatment he had fostered the erroneous belief of the general practitioner that clinical examination is superfluous; in his growing preoccupation with physical and specific therapy he gave the impression that the men and women under his care were mere containers of disease; he has, therefore, now no ground for complaint against the deservedly high reputation of the psychologist in sanatorium practice. Thirty years ago the chest physician treated the patient who had disease; twenty years ago he begun to treat the disease in the patient; now he tends to treat the film of the disease of the patient. The experienced physician in the person of Dr. Pottenger realizes this when he says, in *The Fight Against Tuberculosis,* "Today the chief early treatment of so many patients seems to be x-rays." The view of the psychologist is equally aptly expressed by Harry Wilmer in *This Is Your World,* when he writes of the dangers of treating the patient,

> "As a case—a number
> A motionless object
> Upon a Procrustean bed.
> Limited at the beginning by an x-ray
> And at the end by another."

Little wonder the radiologist has stolen the thunder and that he often resented the appointment of a chest physician as director of the early mass radiography units. I admit that I am biased, but this is, I honestly believe, the bias of experience. I do not think we have yet arrived at the position where a general radiologist can be asked to view a film and to say whether it shows the presence of phythisis which is active and clinically significant. I believe it is for the benefit of the individual with an abnormal film, and for the benefit of research, that mass x-ray units should be under the direction of a physician who can write his film reports from both the descriptive and the interpretative aspects in the light of his clinical findings. So far, no film can be said to be typical of any one chest condition, in view of multitudinous and individual variations. We do not even know for certain the cycle of lung tuberculosis from primary focus to established sub-clavicular disease. What is far more important, we have no clear principles to guide us on the grave decision on when to change a person into a patient but must still rely on the personal experience of the observer. Great contributions to advancing knowledge on the significance of abnormal films and on living pathogenesis can be made by the physician who has full facilities in bed observation, and in laboratory equipment that can help him to reach a final diagnosis for every abnormal finding. On the other hand, I admit freely that the proper development of any specialism must depend on the prevention of its boundaries from becoming static and exclusive. If therefore the radiography unit director can call on the radiologist to aid with the mechanics of apparatus and darkroom technique, and to add his opinion in the anomalous and difficult case, both can work towards much needed national and international standardization. It is well known how often slight variations in technique cause great difficulties for both in the reading of serial films. Agreement on size of large film, on positioning, on centering, on distance of focal spot, on exposure factors and on developing processes would bring decided advantages. Descriptions of findings should bear a meaning similar to all who read them; radiologists, specialist physicians and surgeons, and general practitioners alike. At present, we have no common ground even on the localization of disease in description, and still less on the definition in interpretation of such terms in common use as mottling, reticulation, infiltration, fibrosis, emphysema, collapse and atelectasis. We have no international usage on the nomenclature of the main bronchi and pulmonary segments. Meantime, our difficulties increase. For example, it has become fashionable to use a new, purely radiological term, "minimal disease." Even if we could reach agreement on the size of the lesion it describes it would still remain far too indefinite; to the chest physician it conveys nothing of the components or nature of the lesion, and therefore nothing of prognosis, and we cannot blame the general practitioner if he concludes that it means in every instance disease of minimal significance.

The time is ripe also to attempt to see in proper perspective the impact of routine mass radiography findings on our knowledge of morbidity. The number diagnosed as active following any first survey cannot give a true assessment, as many of them reach without illness the quiescent stage found in double their number at that same examination. Some writers believe that although the death rate is only a poor index it is possibly the only one that can be comparable in the light of the conditions of the past twenty years, during which methods of diagnosis have developed so quickly. Even here there is a danger that in our new enthusiasm we are including cases where routine postmortem shows some small lesion that had no clinical significance during life, and no effect in accelerating death. There is no doubt, however, that we must have measures aimed at effective notification. As matters stand at present in Great Britain, no reliance can be put on notification rates as an indication of real incidence as long as the chest physician of a large county borough can report that in 1951 his clinics diagnosed 412 new cases, of whom only 158 were notified by their general practitioners. Naturally, if we now take this matter more seriously we shall get an apparent increase for some years, but this might well offset the unchanging figures of notification only at death, and so disclose more of those sources of infection over which we can at present take no action for the public good.

We must beware, however, of everything that will savour of unwarranted interference with individual liberty. It is well to remember Sir James Kingston Fowler's dictum, "Once notified, always tuberculous." I cannot believe that any good would come from attempts at forcible attendance at clinics or compulsory isolation of the infectious. Indeed, we have no criterion for infectivity as long as we continue to count as equally infectious the patient with bacilli demonstrated only to a single stomach washing and the patient with clusters of organisms to ordinary smear-slide examination. Theory and experience are entirely contradictory. Our anatomists tell us that the arrangement of the bronchi and their ciliary linings ensure that only rarely can droplets of sputum containing a very small number of bacilli reach the pulmonary alveoli, while we know as physicians that close contact can produce in tuberculin negative reactors both morbidity and mortality. Yet, in spite of our justified anxiety over infection, it still seems better to me to rely on the slower methods of education than on any form of compulsion, which I find abhorrent as giving only an official blessing to social ostracism of the tuberculous. All such measures can do is to produce a class of the tuberculous that will be frankly asocial, and to encourage in the mind of the adult worker the association of x-ray examination with disease, and of disease with economic disaster. If we must have legislation then let it be towards protection against victimization and loss of employment.

A far better course would be for us to use our energies for the wise adaptation of our resources. We know that the cost of surveying the whole population would be prohibitive but we could work towards two definite objects, first the examination in industries and groups known to give the highest proportion of positives, and the combination of routine radiography with tuberculin testing with the object of helping future generations. I believe we should now institute routine tuberculin testing of infants at welfare clinics, referring to the chest clinic for x-ray examination every positive case. With the knowledge that a recent positive would almost certainly mean recent infection, the family physician would be notified of the urgent necessity for the x-ray examination of all contacts. Where the child's x-ray is abnormal there would be immediate reference to a pediatric unit. Routine testing should be continued at intervals during school life and combined with full examination of all those, such as teachers, who come in close contact with organized groups of children. As finances allow and experience increases, the scheme might be extended into adolescence and early adult life, in its earlier stages including the routine examination in factories and offices of Senior Executives whose work brings them in close contact with adolescent employes. As Myers has so truly said, "As long as we are content to allow primary lesions to go unnoticed and to begin treatment after illness or demonstrable x-ray disease, we can hardly expect to cure tuberculosis." He goes on to say that we must find some antibiotic that can be given with saftey immediately after the appearance of a positive tuberculin test.

This is tantamount to say while we believe we know what might be done toward the prevention of primary infection, we have still a long way to go in the production of active measures towards the prevention of post-primary morbidity. I believe, however, that there are now indications of a possible solution of some part of this problem. Experience over the past thirteen years of the growing necessity to pay attention to the life history of the individual with unsuspected active disease has made me ask myself many questions. Why is phthisis still "The Captain of the Men of Death" at the ages most important for national economy? Have we become so intent on treatment, physical and specific, that we have ignored the forewarnings of morbidity disclosed in the stories of the hopes, fears, and spiritual outlook of our patients? Was Sir Robert Philip correct in his forecast that the tubercle bacillus would become "the new pet?" Are we to accept without humility and without speculation the known facts that morbidity decreased rapidly in America and Western Europe between 1850 and 1910 when no National Anti-Tuberculosis Campaigns existed; that, in spite of this, morbidity and mortality in adolescence and adult life continues; that two-thirds of all post-primary lesions attain arrest without our intervention and yet we fail with considerable numbers of those to accept it?

Six years ago I wrote what I still believe, that the sanatorium which relies on a fixed routine, however good, and believes that it has reached perfection merely by employing the latest mechanical aids of surgery, may succeed in preserving the lives of its patients but will not renew them. Such a sanatorium demands no faith from the patient and no moral standards in a physician; it is merely materialistic. What it lacks is the aid of the psychologist and the aid of the priest, each confining himself to his own sphere and working in full co-operation with the physician. In other words, I believe that we must retrace our steps in our attitude to all chronic illness, and in particular to phthisis, in the knowledge that "Where there is no vision, the people perish." Unless we get to know why some people become ill, while others keep well, we shall never understand the fundamentals of preventive medicine. Holding fast to what we have learned of the material aspects, and therefore avoiding the quackery of non-scientific so-called "Spiritual healing," we must again work through and beyond the intervening help of the psychologist toward the renovation of the spirit by the priest that was so well understood by the early Christian Church. Thus, we shall begin to study man in his wholeness, body, mind and spirit, and in regaining our position as physician-educators make a real contribution to the healing of the nations.

A REMINISCENCE OF CERTAIN EVENTS BEFORE, DURING AND AFTER THE DISCOVERY OF CORTISONE

PHILIP S. HENCH, M.D.
Rochester, Minnesota

IT IS AN alarming variation from the normal when a grand old lady on *her* one hundredth birthday welcomes a *somewhat* younger visitor and says: "Now do tell me all about yourself!" But that is more or less what your Vice-Centenarian, Dr. Briggs, has asked me to do.

Hanging in my son's room is a supposedly impressive copy of the Hench family coat-of-arms. It is beautifully drawn in bright colors, and if it isn't authentic, I'm out $20.00! My son's father gave it to him in an uncertain attempt to convince him of the "respectability" of his family, a proposition which nowadays young folks so often challenge.

Perhaps my son's incredulity is well founded. At least one rumor has it that our European ancestor of 1600 A.D. was euphemistically called "the Robber-knight" of Württemburg. In that case he was, I fear, more red-blooded than blue-blooded.

Although the color of my blood may be somewhat lacking in "quality," my spiritual inheritance has been definite and positive. The central faith of my fathers, though derived from several Protestant theological origins, has always been a strong and happy allegiance to the Christian faith. Thus, I have felt completely at home as I have spent all but one of the thirty-five years of my hospital life in institutions operated "For the Glory of God" by dedicated members of your great Catholic faith.

My Thirty-four Years in Catholic Hospitals

I began my career in Catholic hospitals in that terrible autumn of 1919 when my medical school was closed during the emergency, and when, with classmates, I was removed precipitously from the Medical Enlisted Reserve Corps to serve as a student-intern in a small hospital suddenly deprived of its graduate staff. At the old Pittsburgh Hospital, I certainly "practiced medicine." Were the worthy Sisters (the Sisters of Charity of Mother Seton) alarmed by my efforts? I never knew, for all they asked was that we do our best.

Then came training in Pittsburgh's Mercy and St. Francis hospitals, and in 1922, by an accident of fate, I became the first, and for a while, the only medical resident at St. Marys Hospital in Rochester, Minnesota. A little later, the Mayo Clinic's first service for rheumatic diseases was established at St. Marys Hospital where thousands of our rheumatic patients have been ministered unto by Sisters Joseph and Domitilla, Sisters Rebecca and Mary Brigh, and above all, by Sister Pantaleon, my invaluable colleague for twenty-three years (since 1930).

Now if one is careful enough, a man *can* serve two "masters." Despite my professional allegiance to St. Marys Hospital, I fell in love with the daughter of Mr. John H. Kahler, the founder and president of Rochester's other hospital system. Some of you may have known Mr. Kahler, a loyal and distinguished citizen of Rochester and of Minnesota.

In due time (it seemed an awful long time!), I became Vice-President of the Kahler Hospital and Hotel Corporation. Can I convince you that my appointment had nothing to do with inheritance, but was strictly a matter of merit? Despite this appointment, I have never for one moment been tempted to move our service from St. Marys to the Kahler Hospitals. Sometimes I've wondered whether, as an officer of the Kahler Corporation, I have not unconsciously thought that the Corporation would be better off if I stayed at St. Marys as long as they would have me.

Welcome to the Flemings

Sir Alexander and Lady Fleming: Mrs. Hench and I wish to add our own welcome to the warm ones you have already received. I believe this is Lady Fleming's first visit to Minnesota, but you, Sir Alexander, are no stranger here; we recall with pleasure your visits to Rochester in July, 1945, and in 1949.

And now Mrs. Hench and I share with you a very special experience: twenty-six years ahead of you, we also spent, at the St. Paul Hotel, part of *our* honeymoon.

You come from a wonderful country, one whose

From the Division of Medicine, Mayo Clinic, Rochester, Minnesota.

Remarks made at the Centennial of Saint Joseph's Hospital, St. Paul, Minnesota, May 16, 1953.

stability and propriety have been the admiration of the world. Happily, Mrs. Hench and I know it well and have many friends north and south of the Cheviot Hills. In exploring the cities and villages of Great Britain, Mrs. Hench and I tried to follow the prescription of Rarus which, I believe, every traveler would find invaluable. Said Rarus: "Pray tell me what sort of people you found them. What do they do? Are the men likable? What do the women look like? Of their inns and how they live. Of their work and how they do it:—if there be unusual rogues among them I care not, for well I know that honest men outnumber them. Then tell me of their good and valiant King and Queen, and if the country be prosperous—and how much my money will buy there, and I'll thank ye, and I'll seek the rest for myself."

We Americans ask of our distinguished visitors from London no more than that: With this formula they will find the friendly heart and firm faith of our country.

The Tragedy of Rheumatism and Arthritis

But I've been asked to talk about something other than travel, something less pleasant than honeymoons though hardly less common, namely rheumatism, the tragedy of rheumatism and arthritis, and also something of the discovery and clinical application of cortisone.

Most of you, whether you be physicians, nurses or laymen, have an interest in rheumatism because so many people have one kind or another. How many people? Well, more than 10,000,000 Americans have some sort of rheumatism (according to the latest Public Health Survey), of which about 7,000,000 have some kind of chronic arthritis.

That would make a huge city almost twenty-five times the size of St. Paul, in which every man, woman and child suffered from chronic arthritis, or a city about nine times the size of St. Paul and Minneapolis together (assuming, of course, that you can get St. Paul and Minneapolis together). Or it would be the same as if almost everyone in New York City or in London, England, had rheumatism or arthritis.

Think of the pain, disability, frustrated hopes and economic loss! But let's put it another way. Just suppose that chronic arthritis affected every American with our eleven most common names—Smith, Johnson, Brown, Miller, Jones, Williams, Davis, Anderson, Wilson, Taylor and Thomas. Think of everyone you know by those names. Put together every American so named, and that's how many people complain of chronic arthritis.

Of course, a lot of them have a mild form, osteoarthritis, which comes with age. But about 3,000,000 Americans have the form we worry about most, rheumatoid arthritis.

The Pessimistic Attitude Toward Rheumatic Diseases

When I was a medical student in Pittsburgh and a fellow of the Mayo Foundation, physicians were pessimistic about the rheumatic diseases, especially about rheumatoid arthritis. They shared the opinion of Sir William Osler, who is reported to have said: "When an arthritic patient walks in the front door, I want to run out the back door!"

Rheumatoid arthritis was considered a relentless progressive disease. Therefore, I too was not optimistic when, on April 1, 1929, I went to see another rheumatoid patient. But he was different from any I had ever seen before.

The Ameliorating Effect of Jaundice

For a long time, this patient's joints had been painful and swollen. Then one day yellow jaundice developed and almost immediately the painful swelling began to disappear. When I saw him a few days later, he had practically no rheumatism.

Thereafter, on the lookout for this phenomenon I saw it happen fifteen more times during the next five years. Only one conclusion was possible. Contrary to the belief of centuries, rheumatoid arthritis must be potentially reversible, and rapidly so.

But what unknown "antirheumatic substance X" developed during liver disease with jaundice? Attempting to identify it, my colleagues and I gave arthritic volunteers various products of the liver, singly and in combination. But nothing happened to the arthritis. Despite this, the conviction developed that substance X was something normally present in our bodies, of which substance the arthritic patient did not have enough.

Beneficial Effect of Pregnancy

Then I became equally impressed by a strange occurrence which we and others had noted previously but to which we had not paid sufficient attention. When a rheumatoid woman became pregnant, she usually lost her arthritis for several months. Over a period of eight years (1931 to 1938), we studied this phenomenon as it developed thirty-four times in twenty women. As a result we changed our ideas as to the probable nature of substance X.

During pregnancy, a number of steroid hormones of the body are changed profoundly. Assuming that the unknown substance X of pregnancy was the same as that of jaundice, we began to suspect that the mysterious substance was neither a product of the liver nor a female hormone but might be a steroid hormone common to both men and women. But what hormone? And from which bisexual gland? Among the possibilities listed in a 1938 paper, I included the adrenocortical substance, "cortin," but we did not try it till three years later.

Relief of Other Diseases by Jaundice or Pregnancy

Between 1929 and 1938, I regarded substance X as essentially antirheumatic. But then it came to my attention that pregnancy and jaundice sometimes relieved a number of other conditions, in particular certain allergic conditions, such as hay fever, asthma, migraine headaches and sensitivity to certain foods. This observation added excitement to the search because I now suspected that if substance X could be identified and prepared it would work against several diseases, so I began to speak and write of it as the "antirheumatic and antiallergic substance X."

Could Substance X Be An Adrenal Hormone?

I assume that you all know by this time that I am not a chemist, but a rheumatism specialist. Now, in the years I've been talking about, my title was, to be more correct, a "*mere* rheumatism specialist." In those days, that specialty had so little appeal that I'm sure many regarded our department as the "soft under belly of the Mayo Clinic!"

In any event, I very much needed chemical help, and sought it from various colleagues, especially Edward C. Kendall, chief of the Division of Biochemistry. Prior to 1938, my conferences with Dr. Kendall were infrequent and casual. But thereafter he became my chief collaborator. As we tried on innumerable occasions between 1938 and 1948 to conjecture what might be the chemical nature of substance X, neither of us knew that he and his associates, working on the adrenocortical compound E in his laboratory a few yards away, were at the very moment trying to isolate, identify and synthesize substance X or a reasonable facsimile thereof.

Let's Try Compound E

It would not be proper to infer that my confidence in the validity of these developing concepts was constant and unwavering. A few basic facts had been bound together with subtle suggestions and reasonable presumptions, but it was frankly recognized that the latter might be erroneous no matter how logical they appeared. Hence various possibilities were still entertained, and certain empiric procedures were carried out including the use of adrenal lecithin. But again the results represented "failures."

As time passed, our interest focused more clearly on the adrenal cortex as the possible source of substance X, and during one of our conferences in January, 1941, Dr. Kendall and I decided to administer to rheumatoid volunteers the substance, 17-hydroxy-11-dehydrocorticosterone. But our decision could not be carried out then, because in the whole world there wasn't enough of this material for a single patient. However, the decision to try it out was recorded in my notebook and remained attractive through the several years of waiting. We did not know then that almost *eight* years would elapse before we would have enough for our first volunteer.

In place of this substance, my colleague, Dr. Charles Slocumb and I, in 1941, gave to certain arthritic patients the adrenal cortex extract, "cortin," made for us by Dr. Kendall. Results were not impressive. With no likely product available to us, we then produced (with time out for military service) "yellow jaundice" by giving to a few arthritic volunteers a synthetic compound called "lactophenin." Temporary remissions developed but we could not identify the responsible agent.

The year was 1948, *nineteen* years since these studies on pregnant or jaundiced arthritis had been started; yet we could not be sure that we were a millimeter nearer any solution. For *ten* of those *nineteen* years, Dr. Kendall had been helping Dr. Slocumb and me in some of his spare time, "with his left hand," so to speak. But for *nineteen* years his right hand had been intensely preoccupied with a problem which at first seemed remote from ours, but which, as time passed, became more and more interrelated.

Isolation, Identification and Preparation of Cortisone and Hydrocortisone

Having been, in 1914, the first to isolate the thyroid hormone, thyroxin, and having been the first to announce, in 1929, the precise chemical nature of glutathione, Dr. Kendall made attempts, in 1930, to isolate, identify and synthesize the unknown hormone or hormones of the adrenal cortex—a problem which was to afford him his bitterest disappointments as well as his greatest satisfaction.

To the tremendous difficulties inherent in this problem, there was added from the very beginning an inescapable, ever-present tension, because other chemists had chosen the same objective. Thus began a dramatic scientific race, chief participants being Wintersteiner and Pfiffner, at Columbia University, Reichstein and his associates, in Switzerland, and Kendall, Mason, McKenzie and Myers, of the Mayo Foundation.

During the next four years, Kendall and his associates separated a very small amount of crystalline material which was at first hopefully regarded as the one compound, *the one* hormone of the adrenal cortex—probably cortin. To their surprise, the material turned out to be a mixture of several closely related crystalline compounds. Their chemical nature and physiologic effects (if any) were unknown.

Then, in 1935, what had started five years before as a competitive race, turned into a highly productive relay race as the participants "leap-frogged" each other with interrelated discoveries. Crystals began to precipitate out almost simultaneously in New York City, in Rochester, Minnesota, and in Switzerland. In all, twenty-eight compounds were separated but still only in relatively minute amounts, insufficient to give to human beings, for it took, for example, 3,000 pounds of adrenal gland to produce about 1 gm. of one of the compounds (Compound A), 1 gm. being the weight of three aspirin tablets.

It took ten years (1930 to 1940) for Kendall, Reichstein and their associates to separate and identify these compounds. Then when small amounts were given to animals, it looked as if only four of the twenty-eight compounds might be worth anything, that is that they might actually be "finished glandular products" or true hormones with physiologic potency. The four which seemed to hold promise of usefulness were: 11-dehydrocorticosterone which Kendall called "compound A"; corticosterone, which was Reichstein's "substance H" or Kendall's "compound B"; 17-hydroxy-11; dehydrocorticosterone, designated "compound F" by Wintersteiner and Pfiffner, "compound E" by Kendall and his associates and "substance Fa" by Reichstein and 17-hydroxycorticosterone, Reichstein's "substance M" or Kendall's "compound F."

The Preparation and Trial of Compound A: A "Dud"

Since it was impossible to separate from the glands of animals enough materials for practical use or even for any adequate trial in human beings, it became necessary to make them artificially, that is to prepare them "synthetically" from some more available source. This was the most difficult part of all, because no chemical so complex had ever been made by man. The only ones bold enough to begin and continue the task were Kendall and his associates in Rochester and the research chemists of Merck & Company. After five years of prodigious work, compound A was at last prepared, but when given to a patient with Addison's disease it proved to be useless.

Preparation of Compound E: First Usage

Disappointment was bitter in 1946. But these men of faith and fierce compulsion determined now to make compound E (Kendall) as the last try. Finally in May, 1948, using methods devised chiefly by Kendall, of the Mayo Foundation, and by Dr. Lewis H. Sarett, of Merck & Company, the company had on hand a few grams of compound E made from animal bile. The first precious supply of the new compound, ready after infinite labor, was given to three endocrinologists who found it useful in Addison's disease, a condition so rare that it alone did not justify continued production. At this point, Messrs. Merck, Kerrigan and their associates were men with a substance (compound E) hunting for some unknown condition which it might affect, while I remained a man with certain diseases hunting for an unknown compound (substance X) which might affect them.

For the moment, then, Merck & Company knew of no other sponsor and of no other use for compound E. Thus they had on hand a little unassigned compound E which Dr. James Carlisle and Dr. Randolph Major sent me (somewhat reluctantly) in answer to my letter of September 4, 1948.

For our first rheumatoid patient, Dr. Kendall and I decided to use the seemingly enormous dose of 100 mg. daily simply in order that we might not commit the error of underdosage. Thus on September 21, 1948, my colleague Dr. Slocumb began to administer this amount daily to our chosen patient. The antirheumatic effect was unlike that of any previous remedy, or of any agent except pregnancy or jaundice.

First Use of Pituitary ACTH (Corticotropin) and Hydrocortisone

Against Arthritis.—A few weeks later we requested and received from Dr. John Mote of The Armour Laboratories, a very small supply of another hormone which it had taken other scientists thirteen years (1933 to 1946) to isolate and prepare. This hormone, ACTH (now called corticotropin) derived from the pituitary gland, was supposed to stimulate a patient's adrenal glands to an increased output of cortical hormones, including compound E. We were concerned briefly lest the arthritic patient's adrenal glands might already be making an abnormal or toxic product: if so, the ACTH might aggravate, rather than help matters. When its effects resembled those of compound E, we were relieved (February, 1949).

A month later (March, 1949), Drs. Slocumb, Polley and I received from Dr. Harold Hailman of The Upjohn Company just enough compound F free alcohol (Kendall) to use for twelve days on one patient. Its effects were comparable to those of compound E and of ACTH.

Against Other Diseases.—Meanwhile remembering the old conjecture that our hypothetical "antirheumatic and antiallergic substance X" ought to be effective against, not one, but several diseases and types of diseases, my colleagues and I gave compound E to our first few patients with rheumatic fever, hay fever, lupus erythematosus and three or four other diseases, and were happy, but not too surprised, to note the results.

Wide Application to the Field of Medicine

Much of what has happened thereafter is, I believe, known to you. Writing a brilliant chapter in the history of pharmaceutical manufacturing, Merck & Company accomplished "the impossible," and within two years, compound E was available to every research worker and physician in the United States.

Incidentally, Dr. Kendall has reminded me of an expectant mother who is so preoccupied that she never gets around to choosing a name for her offspring. And so in the early days when I objected to using its chemical name (Can you blame me? I could hardly pronounce it.) and when I asked Dr. Kendall to suggest a permanent substitute for the nondefinitive term "compound E," he soon gave me, without enthusiasm, a piece of paper with the abbreviation "corsone" written on it. But he did not mind when I wrote underneath his suggestion my own amendment, "cortisone," and thus it was "baptized."

In the past four years the manifold effects of these new hormones, cortisone, hydrocortisone and corticotropin, have been studied by a host of scientists all over the world. These powerful substances exert a marked influence on many conditions. But just how they work is still, to use a churchillian phrase, "a riddle wrapped in a mystery inside an enigma." But their action differs from that of any other beneficial agent. They do not kill germs, nor do they "cure" the responsive diseases in the ordinary sense. But they protect in a peculiar way our tissues from the effects of a wide variety of toxic or irritating substances. Thus, they usually suppress markedly (but only as long as they are given) the symptoms of many diseases. I strongly objected to an early hyperenthusiast who compared these hormones with an advertised soap which supposedly "does everything." But they do appear to be of considerable value in about thirty or forty conditions, often providing results superior to those from any previous remedy. Thus they appear to have hit the Achilles heels of several diseases whose armor, heretofore, has been invulnerable.

Many chemical problems remain unsolved. A surprising number are in process of solution. Many clinical controversies are to be settled. But these hormones, perhaps the most powerful ones ever discovered, provide indispensable research tools for a myriad of fundamental investigations. Hence, I will prophesy with confidence that, like the Fuller brush man, we have only one foot in the door so far, and this is merely "the end of a beginning."

The preparations we are now using, and the way we are using them, though superior to those of even a year or two ago, will most assuredly be improved notably. Of course, everyone wants the future *now*. But the impatient, the frustrated and the faint-hearted should measure a remark by Dr. Kendall: "In the search for truth, time has no meaning."

And so, far into time, investigators will find and follow new clues related to the cortisones and the corticotropins. They will be in restless competition, not with each other but with yesterday's mind and truth. But as they, by time and testing, discover a new fact here and another one there, they must meet these truths with humility, not as cold scientists rewarded by cerebral self-satisfaction, but as men whose hearts keep step with their minds and as becomes the inquiring physician who realizes that any single truth, no matter how impressive or useful it may be, is only an infinitesimal fragment of what is the whole truth as it is known to The Great Physician.

The Nobel Prize and the Nobel Festival

During my last visit to Stockholm, friendly reporters asked all sorts of questions. One reporter asked me: "How do you go about winning a Nobel Prize?"

That reminded me of a story: A fifty-year-old man announced that he had $100,000 in the bank and was retiring. A friend asked him, "In these days of high taxes, how did you manage to save $100,000?" The man replied: Well, I've worked very hard for thirty years; I've rarely taken a vacation; I've saved every dollar I could, and I've just received from my uncle's estate $95, 000."

I think that's about the way one wins a Nobel prize, by having the right relationships. We live in a country where freedom of inquiry is still possible, where research is encouraged and supported, and is still a matter of free enterprise. My colleagues, Drs. Charles Slocumb and Howard Polley, and I, had the unfailing support of the Mayo Clinic and Mayo Foundation. But considering personalities rather than policies, I was fortunate in the selection of two people: a long-suffering, self-sacrificing, loyal and understanding wife who created a home of happiness and peace so necessary for an investigator (especially a frustrated one), and Nick Kendall, one of the world's preminent chemists, perhaps the one man in the world who could have given *both* the advice and the materials which were required.

The Nobel ceremony of 1950, which Drs. Kendall, Reichstein and I attended, had a special significance, for it commemorated the fiftieth anniversary of the awarding of the Nobel Prizes. About thirty of the 100 living laureates of previous years were on hand, among them Sir Alexander Fleming.

This "Solemn Festival of the Nobel Foundation" as it was called, was an occasion of outstanding dignity and beauty. For one of the newest laureates, it was also an event of spiritual significance. I found myself seated with four great chemists, an atomic scientist and two men who are supremely capable in the fashioning of words. Although we were separated by nationality, interests and the category of our prize, none of us was alone. The life of each of these laureates had been, or could be, profoundly influenced by the work and hopes and dreams of the others.

To me it was a living demonstration of the internationality and of the brotherhood of science, and of the essential unity of Truth. For any truth is everybody's business.

In Conclusion

In conclusion. let me refer again briefly to cortisone. To be useful, to perform its appointed function in the human economy, cortisone possesses a distinctive characteristic. It must have an oxygen atom at position 11. Without this it is not cortisone but a useless, inert substance.* With this character it is a thing of power. So too, of men and organizations: To fulfill a useful destiny, they must be distinguished by having character, above all a sense of responsibility to their Creator and to their fellow man.

Such an attitude must have been possessed in outstanding measure by the founders of St. Joseph's Hospital, and by those who have since given to it their accumulated devotion that it might accomplish its long century of service.

To come here today to pay my small tribute to the men and women of this institution and to its honored past, has been a pleasant and satisfying experience.

To St. Joseph's Hospital may I make this salutation: Alert centenarian, well postured by worth and justified pride, long may you continue your combat against suffering and diease, those twin indignities on the useful development and happiness of mankind.

---

*It would be "substance S," isolated by Reichstein.

PSYCHIATRY AND RELIGION

FRANCIS J. BRACELAND, M.D.
Institute of Living
Hartford, Connecticut

IT IS an honor to join with this distinguished group of scientists to celebrate the hundredth anniversary of the founding of a great institution, St. Joseph's Hospital, and to pay tribute to its valiant band of founding sisters and their spiritual descendants. We, as visitors, can know but little of the privation and sacrifice which goes into the building of a hospital of this renown, from its log cabin beginnings to its present honored status. We can only register our respectful appreciation of the great staff, religious and medical, whose privilege it has been to contribute their services to the hospital in the century of its existence. In tribute to all of them we reiterate with Sir William Osler that "there is no higher mission in this life than to serve God's poor."

When this subject matter was suggested to me, I wondered about the propriety of such a presentation on a program graced by world famous medical scientists, justly honored for their outstanding researches, and yet, as one considers it, such a discussion is not unseemly, for the problems to be treated under these headings are pressing and they require clarification and understanding. Here are involved the difficulties and differences of opinion of a medical discipline and religious belief treating of two aspects of a man's life which should never be at variance, for together in concerted action they have sustained man since the beginning of civilization. It is fitting to air these problems in this setting, which is dedicated to both medicine and religious belief and which, in the dignity that age has given it, is tolerant of new ideas as long as they are helpful to the physical and mental well-being and the spiritual growth of man.

In the era in which this hospital was founded but little attention was paid to mental disease, though its history was as old as man. There were no practitioners of psychiatry as such: there were alienists, a few of them, but they were concerned mostly with the legal problems which the mentally ill presented. The basic medical sciences were advancing rapidly and with them went a mechanistic and materialistic outlook, in which more often than not the disease process was sought out and the individual who had the disease was forgotten.

Definitive treatment and research in mental illness were unknown at the time and even the care of these patients was altogether in isolated rural institutions and on the outer fringe of medical practice. To be mad was to be mad, even as it was in Shakespearean times and even general hospitals under religious auspices were reluctant to provide for the mentally ill, who were regarded as a people apart. In some ways this was neglect of a heritage, for in the earliest city hospitals on record, those founded by Pope Innocent III, he had objured them especially to provide humane care for the insane in special "psychopathic" sections. It is noteworthy that only within recent years have psychiatric wards been re-established in general hospitals in response to the demands of the times and not infrequently with serious misgivings on the part of staff and administration alike.

This is not the place to recount the difficulties psychiatry has had in gaining acceptance as a branch of medicine nor to go into the reasons for it. Recognition was slow and suspicion of it has not been dispelled entirely even in the present day. Suffice it to say that the medical experiences in two world wars and the emergence of the concept of psychosomatic medicine have done much to effect closer rapprochement between medicine and what it has regarded as its errant adolescent daughter, modern dynamic psychiatry. This rapprochement comes none too soon, for there are at present several lay groups anxious to take over the medical art of psychotherapy, an eventuality which, should it transpire, would have devastating effects upon sick people and very seriously complicate the practice of medicine.

Psychiatry had had few problems and aroused little animosity in either practitioner or theologian as long as it remained behind large stone walls and cared for the the mentally ill—no one else wanted them. It was only when it emerged with concepts and a psychology of its own and

---

Real at the Centennial observation of the founding of St. Joseph's Hospital, Saint Paul, Minnesota, May 16, 1953.

entered into the treatment of emotional problems that it began to experience suspicion and distrust. This hospital had been founded for half a century before the ideas were promulgated which were to be the source of conflict, the advent of the doctrines of psychoanalysis, product of the genius of Sigmund Freud.

Brilliant pioneer that he was, Freud was a product of the materialistic society of the nineteenth century and there is little doubt but that he was strongly influenced by the zeitgeist of his time and its culture. A biologist who began as a neurologist, he was devoted to science, and yet, much of his work was unscientific. His ingenious observations and conclusions were made by intuitive interpretations, the least scientific of methods, and by his feeling for people rather than by quantification of controls and other hallmarks of the real scientific method. From his ventures into philosophy it was soon apparent that his orientation was materialistic and deterministic. Then, as Zilboorg notes, when he labeled religion as an illusion and regarded it as a compulsive neurosis, the theologians' worst fears were confirmed and the battle lines were drawn. Peculiarly enough, Freud arrived at his ideas about religion by an insistence upon the infallibility of his own methods and by elevating to the position of final causes the psychological mechanisms he was fortunate enough to discover.

Briefly stated, modern psychiatry has come under the anxious scrutiny of the theologians because they have been unable to correlate much of the philosophy of analytic doctrine with traditional Judaeo-Christian beliefs. This for them is no sterile philosophic quarrel; it is fundamental. In defense of their belief, some members of the clergy have attacked psychiatry, and particularly psychoanalysis, because they believe it teaches a destructive principle. Some psychoanalysts, in their turn, have questioned certain religious teachings and they profess to find in them the foundation of nervous disorders. They imply that in the light of their new findings the orthodox teachings of the Judaeo-Christian tradition should be examined and changed. Despite these apparently irreconciliable viewpoints, this conflict is not beyond satisfactory solution for it is difference of opinion between groups which are looking only at accidental segments of the problem. Should ever the representatives of these opposing ideas be able to meet, the possibilities of mutual enrichment are many and the resulting common agreements would go far toward healing some of the emotional ills of modern man. The ancient ideas of Thomas Aquinas would lend substance to the thinking of the modern psychiatrist, while modern psychological insight into normal and pathological reactions would be of aid to the theologian.

There is little disagreement with the statement that no single individual ever contributed so much to the knowledge of psychology and psychiatry as did Sigmund Freud. There is also general agreement that the methods of psychoanalysis, properly used, have opened a field which promises benefit to mankind of the magnitude of aseptic surgery and chemotherapy. The quarrel between analysis and religion stems not from the factual material or the techniques of psychoanalysis, for they are compatible with religious belief; rather the disagreement stems from the philosophico-religious overtones which accompany this psychological system. That the discoveries and methods of psychoanalysis can be used today without subscribing to the philosophy which accompanies it is an accepted idea among thoughtful scientists and theologians.

Karl Stern has pointed out that this dynamic and phenomenological approach to psychiatry, which arose out of the depths of nineteenth century materialism, can be Christianized, whereas many other psychiatric methods, which in themselves look bland and neutral, may contribute to the tools of nihilist society. "It is the duty," he says, "of every psychiatrist who holds a spiritual concept of man to avoid all purely negative attitudes." He should accept all that is genuine in the psychological insights of Freud, Jung and Adler, strip it of all of its accidental materialistic superstructure and use it as an instrument of healing.

The physician who is not a psychiatrist becomes impatient at about this time and wonders just how important these differences of opinion really are. In truth, they are fundamental, for the philosophic overtones of the original analytic doctrine imply a reductive principle. In this system the God of Judaeo-Christian belief becomes a father image. In a manner similar to Copernicus, Freud centered the universe of psychologic relationship about parental images. Before this, in a search for first causes man had seen God as the center of the universe. The Freudian doctrine saw the Oedipus complex as the center of human psychological affairs and thus, as Stern points out, with one change reversed the process and created God in man's image. Here was altered a monotheistic idea of almost 6,000 years' standing—it called into question the moralistic standards of a civilization and hung man precariously on the thread of a specious present. These concepts would set men adrift philosophically in what amounted to a psychological and spiritual revolution. It is easy to see that the appearance of these ideas would cause consternation.

On superficial examination it might seem easy to disentangle this philosophic superstructure from the facts which analysis demonstrates but in actuality it is not easy, for the doctrine has permeated deeply into the attitudes of the practitioners. It has been stated that, had Freud had a spiritual approach to the problem, it would not have shaken any of his fundamental discoveries, but rather with his genius he might have built a magnificent psychological structure. The fact remains that he did not and therefore, in the minds of many, the edifice which he began remained incomplete.

This rapid deviation of medical psychology into new channels found the philosopher and theologian unprepared for the empirical observations which it would present. Thomas Aquinas had left no special treatise on psychology in the modern sense of the term. Like his predecessors and contemporaries, he had no predilection for psychological facts as such. To him these facts were important only insofar as they related to the metaphysics of human nature or the ethics of human behavior. The reaction of the critics of this new doctrine was therefore of negative nature and, in the layman's mind, these problems were confused with psychiatry in general and the whole discipline became suspect. Some of the more zealous of the critics saw grave error and sin, even in psychiatric consultation, to the distress of patient, referring physician, and psychiatrist alike. Psychiatrists knew they were anxious only to practice a medical discipline and they had no desire at all to dabble in either philosophic or theological areas or to interfere with their patients' beliefs. Patients on their part knew that they were ill and more often than not, they were being helped. Their attitude towards the psychiatrist was like that of the man in the scripture who, upon being questioned, replied: "If he be a sinner I know not but this I know, I was blind and now I see."

This was the state of affairs until recently. Here was psychiatry, a medical specialty responsible not only for half of the country's hospitalized patients but for the neurotics of all kinds and description whose number is legion, and yet in some areas it was under suspicion. The specialty and its practitioners must of course share much of the blame for they, too, have a number of zealots whose pronouncements cannot bear too close inspection and whose truculence is in inverse proportion to their knowledge. Fortunately, at present the way toward understanding and rapprochement seems clear and the situation has been helped immeasurably by two allocutions by Pope Pius XII, delivered within a period of seven months and indicative of an intense interest and a broad understanding of the problem.

The discourse of September 13, 1952, outlined the moral limits of research and treatment. It set forth briefly the essential principles and left the application in specific cases to the doctor. "Because only the doctor understands the medical evidence thoroughly, both in itself and in its effects, and because without expert knowledge of the medical facts it is impossible to determine what moral principle applies to the treatment under discussion. The doctor therefore looks at the medical aspects of the case, the moralist the laws of morality." In this allocution the morality, the efficacy, and the correctness of the pan-sexual method of a certain school of analysis are denied. Most psychiatrists would have no trouble in agreeing with this pronouncement and this extreme school has had few adherents in late years.

In the discourse of April 15, 1953, addressed to delegates of the Fifth Congress of Psychotherapy and Clinical Psychology, the hearers were cautioned not to lose sight of the truths established by reason and faith nor of the obligatory precepts of ethics. This allocution spells carefully and in detail the safeguards necessary for the protection of the patient and for the ethical and moral practice of psychotherapy. In no place are psychiatry or psychoanalysis, as medical dis-

(Continued on Page 723)

INDICATIONS AND PRECAUTIONS IN CHOLECYSTECTOMY

WARREN H. COLE, M.D.
Chicago, Illinois

I WISH to preface my remarks on indications and precautions in gallbladder disease with a statement on pathogenesis, because of its influence on therapy. During the past several years, I have come to believe firmly that the initial phase of development of cholecystitis is chemical in origin. Later on it appears that infection develops in the gallbladder, but by no means in all cases. Numerous authors have reported the low incidence of positive cultures in acute and chronic cholecystitis. Recently, Twiss and associates[7] have reported studies on 259 patients with chronic cholecystitis, coming to operation. They found a positive culture in the bile in only 28 per cent of cases. The predominant organisms were E. coli, salmonella, typhosus, non-hemolytic streptococcus, alpha hemolytic streptococcus, staphylococcus and proteus vulgaris.

The presence or absence of infection in the gallbladder wall determines to a certain extent the reaction which might develop following emergency operation in the presence of an acute inflammation. If the acute cholecystitis is due primarily to a chemical inflammation the infectious phase of postoperative convalescence is apt to be minimal. On the contrary, if infection is the predominant source of inflammation the operative manipulation in that area may give rise to considerable systemic reaction.

Precautions in Diagnosis.—One of the major precautions in gallbladder disease is obviously related to accuracy of diagnosis. We must always remember that the typical pain in gallbladder disease is located in the right upper quadrant, referred often to the scapula, but not of constant duration. Dyspepsia is often present, but since it is likewise present in innumerable other diseases it becomes of no significance in the diagnosis of gallbladder disease. Gallbladder attacks are so brief in duration that if pain is complained of day after day, the diagnosis of cholecystitis can be eliminated unless a hydrops or empyema is the explanation. As stated above, the attacks of gallbladder disease are usually of short duration. In a detailed study, made by Harridge and Helsby,[6] of 211 consecutive patients having cholecystectomy at Illinois Research Hospital, Chicago, during the past three or four years, 41.7 per cent of the patients had pain lasting less than one-half hour; 12.6 per cent of the patients had pain lasting less than fifteen minutes. In about one-half of the patients the pain was constant, whereas in the other half it was of an intermittent or colic type. Harridge and Helsby likewise noted that in 45.6 per cent of their patients the pain was located only in the right upper abdominal quadrant. Pain was located in the epigastrium alone in 27.2 per cent and in the epigastrium as well as upper right abdominal quadrant in 18.9 per cent.

A correct diagnosis is obviously necessary because cholecystectomy even though stones are present in the gallbladder will not relieve symptoms produced by some other disease.

The pain in the left upper quadrant as seen rather commonly in patients with gallbladder disease may be of gallbladder or pancreatic origin. Occasionally, the pain may be anginal, and may actually be relieved by cholecystectomy, as reported previously. In this presentation we will not go into detail of indications for cholecystectomy in the presence of anginal pain. However, I should like to emphasize that if the pain is unusually severe considering electrocardiographic findings and clinical manifestations of heart disease, gallbladder disease may be exerting a role in the anginal pain. Likewise if severe electrocardiographic findings are present with minimal exercise pain, the gallbladder may likewise be increasing the anginal pain. An extremely important precaution is that operation must not be performed in the presence of a recent coronary thrombosis. Fortunately, the cardiologist with his electrocardiogram can usually identify recent thrombosis, and thus prevent this serious error which so often will result in death.

Precautions in the Presence of Jaundice.—I wish to emphasize the great need for establishing whether or not jaundice is obstructive or hepatog-

---

From the Department of Surgery, University of Illinois, College of Medicine.

Dr. Cole is Professor of Surgery, University of Illinois Medical School.

Read at the centennial observation of the founding of St. Joseph's Hospital, Saint Paul, Minnesota, May 16, 1953.

enous in type. The surgeon must always bear in mind that the most common cause of jaundice is medical, namely, virus hepatitis. If the patient has an obstructive jaundice, operation will be strongly indicated, whereas in the presence of hepatogenous jaundice, operation is almost always strongly contraindicated. A common source of error is the failure of the clinician to appreciate the fact that stools may be acholic in the first two or three weeks of disease in virus hepatitis. The fact that patients with virus hepatitis complain of little or no pain, but extreme weakness, should be very important in preventing errors in diagnosis. With few exceptions, liver function tests are extremely helpful in this differentiation, and, in fact, will rarely fail the clinician. The author favors the thymol turbidity test as probably being the most valuable in differentiation, since it is practically always positive in patients with virus hepatitis if the disease is sufficiently serious as to produce jaundice. However, at least two more tests, such as the alkaline phosphatase and cephalin flocculation test, should be performed, since no one test is sufficiently accurate to be considered accurate.

Value of Cholecystography in Diagnosis.—A few axiomatic statements can be made regarding the use of cholecystography in diagnosis of gallbladder disease. In the first place, if no shadow of the gallbladder is obtained following use of the gallbladder test media, we can rest assured that the gallbladder is pathological with no exceptions, providing the patient received the test material, did not vomit it and did not have a severe diarrhea. The latter two complications are now completely obliterated. I wish to emphasize the importance of the first complication, namely, failure to get the dye, because only a short time ago, we were about to remove the gallbladder in a patient reported as having no shadow following cholecystography, but additional investigation revealed the fact that the patient did not get the dye, although he had the routine cholecystographic x-rays.

The most common error in cholecystography is found in the patient having a shadow (presumably normal) of the gallbladder but actually having a diseased gallbladder. Many of these patients will even have stones in the presence of a normally concentrating gallbladder. If the stones are small, and only one x-ray picture of the gallbladder is available, they may not be visible. Radiologists have now learned that having the patient stand while taking the x-ray picture may allow small stones to gravitate and thus be seen. On certain occasions, stones can be visualized only when two or three pictures are available with decreasing density of the shadow, thus allowing better contrast with the stones. The medias recently introduced for use in cholecystograms are very effective in production of a shadow in normal gallbladders with a small dose, and with practically no reaction. However, there is a possibility that these substances are concentrated so much in the gallbladder that many pathologic gallbladders may actually reveal a fairly good shadow. If this is true, roentgenologists will have to go back to the old custom of interpreting density of shadows, which obviously would be associated with considerable possibility of error.

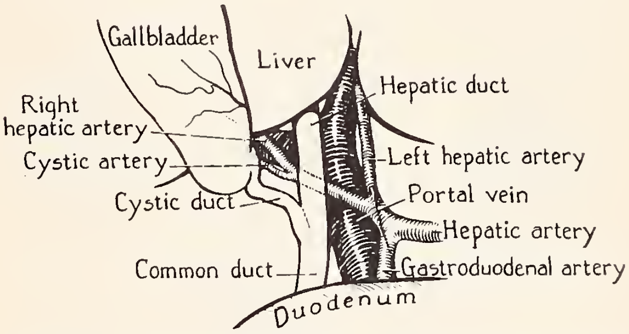


Fig. 1. Composite of the anatomical condition most commonly found in the biliary tract of the human being. Anomalies are probably more common in this area than in any other part of the body.

The great advantage of the media (Telepaque) most recently introduced is that it is concentrated so much in the gallbladder that when it is discharged by the gallbladder into the common duct the latter structure can often be visualized fairly clearly. On rare occasions, stones in the common duct will be demonstrable during the cholecystographic examination.

Historical Data

Since this is an historical meeting, being the Centennial Observation of St. Joseph's Hospital, it might be of interest to relate some of the historical features in the development of cholecystography. It is now just thirty years ago that Dr. Graham and I[4] began work on cholecystography in St. Louis. We first investigated tetraiodophenolphtalein, but the sample of the chemical which we had, turned out to be fairly toxic and we shifted our activities to the bromine compound, namely, tetrabromphenolphthalein. We first used the sodium salt of tetrabromphenolphthalein, but later adopted the calcium salt because the ion calcium is heavier than sodium and known to be impervious to the x-ray. We had Mallinckrodt Chemical Company prepare some tetraiodophenolphthalein, which upon trial revealed no greater toxicity than tetrabromphenolphthalein, but superior shadows. Accordingly, we then began to use it intravenously and orally. We tried out twenty-five or more compounds in our efforts to find the one most effective in producing a shadow. Seven or eight of these compounds produced satisfactory shadows of the gallbladder, but a few of them were moderately toxic. One of the less toxic compounds and one which we used for two or three years was phenoltetraiodophthalein.[5] We used this for a few years because it is a fairly stable dye, and also could be used as a test of liver function since the drug was excreted largely by the liver. Simultaneous readings on liver function could be obtained following the intravenous injection of this dye for cholecystography. It was following the use of the simultaneous test of liver function that we found an extremely high mortality rate in patients having cholecystectomy when a retention of dye beyond normal was found. For example, in a certain period of observation we found that all of our deaths following cholecystectomy occurred in patients having a retention of dye greater than 40 per cent (normal 5 to 10 per cent). Early in our experiments we likewise learned that the strontium salt of tetraiodophenolphthalein was effective in obtaining cholecystograms in animals. Strontium has a much higher atomic weight than does calcium or sodium, but we learned later that the positive ion in this compound was not the ion most responsible for the shadow, therefore the use of strontium was abandoned.

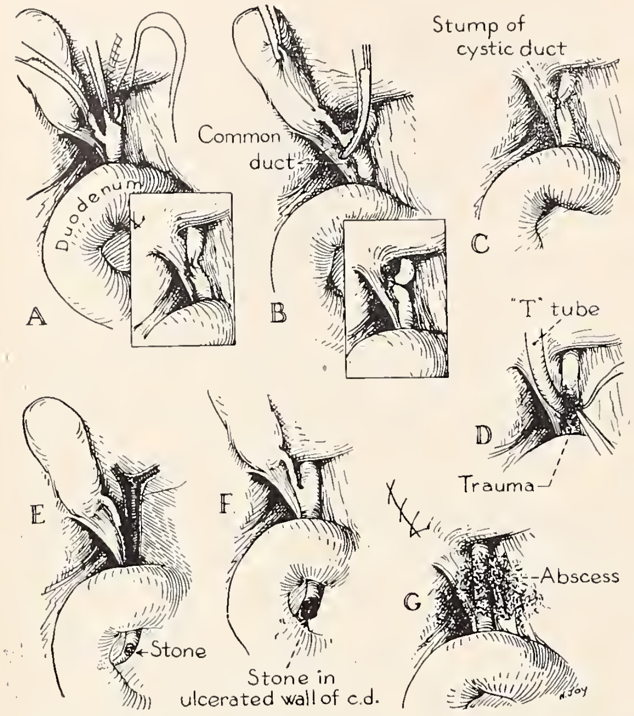


Fig. 2. Mechanisms in production of stricture of the common duct; (A) transfixion with a needle; (B) ligation with the cystic duct; (C) ligation of the cystic duct too close to the common; (D) diffuse sclerosing pancreatitis; (E) cholangitis; (F) ulceration of the wall by stone; (G) abscess or local collection of bile. (From Cole, Ireneus and Reynolds *in* Strictures of the Common duct, Advances in Surgery. New York: Interscience Publishing Co.)

It might be of historic interest to quote from our original manuscript on the exact method used in preparing material for injection into a patient.

> "A dose of 0.1 gm. per kilogram, when injected into a human subject, was found sufficient to cast a shadow. At present, 6 gm. has been the largest dose used. Six grams of tetrabromphenolphthalein is mixed with 1.2 gm. of calcium hydroxid, ground in a mortar with a few cubic centimeters of water, and dissolved in from 325 to 350 cc. of distilled water. Addition of calcium lactate was found to produce a more stable solution and slightly increase its solubility. Therefore, a solution of 2 gm. of calcium lactate in a few cubic centimeters of water is added. The solution has been sterilized by heating it to the boiling point under a flame, and heating in a water bath at from 95 to 100 C. for fifteen minutes."

The above quotation indicates the starting point in cholecystography. The person giving the dye made up the solution just as stated above.

Indications for Operation in Gallbladder Disease

Acute Cholecystitis.—There is still controversy as to whether acute cholecystitis should be treated by emergency operation or should be treated conservatively, waiting for the acute inflammation to subside. It is probable that the majority of surgeons favor immediate operation, but many excellent surgeons still choose to treat the condition conservatively. I, personally, am of the opinion that if the patient is seen within forty-eight hours of onset of symptoms of an acute attack, emergency operation should be performed. I, personally, prefer to treat patients who have symptoms longer than forty-eight hours, on a conservative basis, because the inflammation is apt to be so far advanced that cholecystectomy may be quite dangerous, and associated with a high mortality rate. One of the most significant drawbacks in the adoption of the policy of emergency operation is the fact that errors in diagnosis will be extremely common, and many cholecystectomies will be performed for manifestations produced by some other lesion.

If the conservative method of treatment is adopted it is extremely essential that the patient be watched very closely for the development of manifestations which may be a signal for impending gangrene or perforation. The important signs of impending gangrene or perforation are: (a) increase or persistence of pain; (b) increase or persistence of muscle spasm; (c) increase or persistence of fever, and (d) increase in leukocytosis. Of the four manifestations mentioned above, the first three are obviously the more important. If any of these three manifestations persist or increase, one should be suspicious of impending gangrene or perforation. If all three are present then perforation is so likely that emergency operation should be performed.

Utilizing these precautions, I have never seen a perforation of the gallbladder into the free peritoneal cavity. However, when the conservative method has been followed, I have operated on many patients as emergencies because some of the signs mentioned above developed or persisted. All clinicians have encountered on numerous occasions perforation of the gallbladder with local abscess formation. Often these patients reveal very few local signs.

When operation is performed for acute cholecystitis there will often be difficulty in determining whether cholecystectomy or cholecystostomy should be carried out. In general, attempt should be made to do a cholecystectomy, if inflammation is relatively mild, and the gallbladder can be removed without endangering structures around the common duct and major vessels. Therefore, the condition of the patient at the time of operation is an important factor and must be utilized in the discussion as to which of the two operative procedures shall be adopted. Often aspiration of the contents of the gallbladder will be helpful in determining which procedure shall be utilized. For example, if the contents of the gallbladder are shown, under microscopic examination, to be teeming with bacteria, and the patient exhibits considerable toxicity from the infection, then cholecystectomy may be inadvisable. However, as intimated earlier in this presentation, the causative factor in development of cholecystitis, even acute cholecystitis is often chemical rather than bacterial. If the contents of the gallbladder reveal pus cells but no bacteria, then cholecystostomy is permissible unless the patient's condition is quite critical. Elderly people with complicating diseases do not tolerate major operations very well; in such patients it is often advisable to do cholecystostomy rather than cholecystectomy.

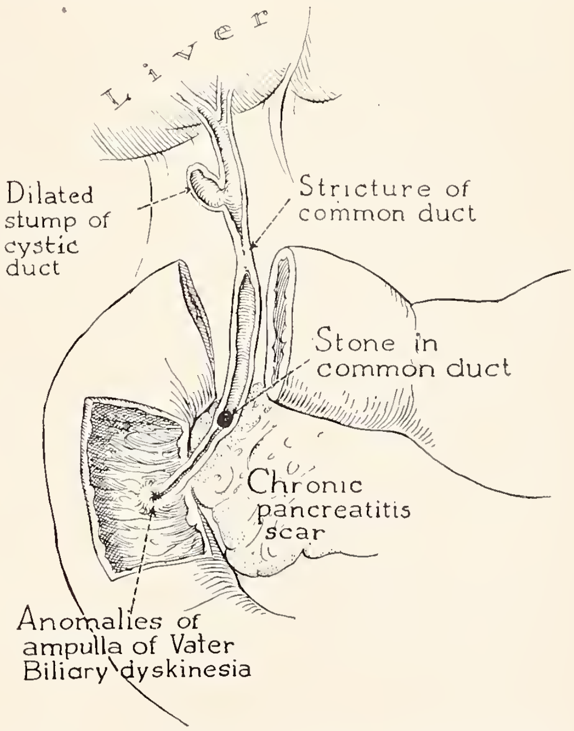

Liver
Dilated stump of cystic duct
Stricture of common duct
Stone in common duct
Chronic pancreatitis scar
Anomalies of ampulla of Vater
Biliary dyskinesia

Fig. 3. Diagrammatic sketch revealing possible causes of persistent symptoms following cholecystectomy; the lesions illustrated include only those located in the biliary system or in areas related to it. (After Cole in J.A.M.A., 1952).

Chronic Cholecystitis.—To a considerable extent indications for operation for chronic cholecystitis depend on the symptoms and their degree. It is always important to ask the patient if the symptoms are severe enough that he would wish to have an operation to eliminate them. However, this is by no means the only, or more important, factor in advising operation, because most clinicians now adopt the philosophy that a diseased gallbladder, particularly if containing stones, should be removed if many years of life are expected. I have adopted the principle of advising operation in patients with no symptoms but proven diseased gallbladder if the patient is under fifty or fifty-five years of age, and normal life expectancy exists. Obviously, we would not advise cholecystectomy in a patient with asymptomatic stones if he has a vicious hypertension with kidney disease, et cetera. Moreover, we do not often advise operation in the presence of asymptomatic gallstones in patients sixty-five or over, on the assumption that they will probably succumb to a natural death before complications of the gallbladder disease develop. However, one important point is almost axiomatic, namely, that if an elderly patient is having symptoms there are stronger indications for removal of his gallbladder at an early date, than in a younger person. The explanation of this statement lies in the fact that elderly people will tolerate cholecystectomy about as well as younger individuals, providing they do not have complicating disease, and providing complications of the gallbladder disease are not present. For example, in a survey[1] of mortality rate of 2,500 patients recently made at the Illinois Research Hospital, we found that the mortality rate in 169 patients under the age sixty having cholecystectomy was zero, and the mortality rate in fifty-four patients over sixty years of age was 1.6 per cent. This statistically is insignificant because there is only one death in the latter series. However, the mortality rate of all patients having cholecystectomy, choledochostomy or choledochoplasty does reveal a sharp difference in the mortality rate in the younger group as compared to that in the older group. The mortality rate for all patients having one or more of these three operations was 0.39 per cent in patients under sixty, compared to 3.9 in patients over sixty years of age. Therefore, it appears quite definite from our studies that the elderly patient can tolerate an operation like cholecystectomy about as well as younger people providing no complication exists.

Precautions in Operation for Diseases of the Biliary Tract

Cholesystectomy can be a very easy operation to perform, but when it is difficult, there is scarcely another operation in the field of general surgery which is as difficult or fraught with as much danger. The ill effect of errors in operative technique are so significant, particularly from the standpoint of danger of development of stricture of the common duct that numerous precautions must be emphasized.

1. *Good exposure* is essential to prevent damage to structures around the common duct and major vessels. Many surgeons prefer an oblique transverse incision for cholecystectomy or choledochostomy. I favor the use of the transverse incision wherever possible, but after using it in several patients for operation on the biliary tract, I have had the uncomfortable feeling that my exposure was inadequate. Accordingly, I, personally, prefer the paramedian incision and make it *long enough* to allow good exposure.

2. The surgeon must *be aware of congenital malformations.* (a) An accessory hepatic duct occurs in about 15 per cent of patients. The surgeon must watch for this accessory duct, and be sure it is ligated because in the absence of ligation considerable bile may pool in the abdomen giving rise to bile peritonitis, or if located only over the common duct may give rise to stricture. (b) An accessory cystic artery is found in 15 per cent of patients. If the surgeon is not aware of this after ligation of one cystic artery, he may hurry along and cut the second with so much resulting hemorrhage that the field is obscured before he has opportunity to control the bleeding. (c) The right hepatic artery lies anterior to the common duct in about 12 per cent of patients. If the surgeon is not aware of this, and cuts boldly through the posterior peritoneum and attempts to open the common duct, he may sever the right hepatic artery. If the right hepatic artery should be severed it should be anastomosed immediately. If not anastomosed successfully a great many of these patients, perhaps half, will die. (d) The right hepatic artery protrudes upward toward the liver parallel to the cystic duct in about 25 per cent of patients. This is a particularly significant hazard, as emphasized by my own experience, since on numerous occasions I have been about to place a clamp on the right hepatic artery, thinking it was the cystic artery. Delay at this point, and positive identification of the structures will save the surgeon much trouble.

3. The surgeon *must not be in a hurry* while dissecting the bile ducts. Damage to structures in this area are much more likely to occur when a surgeon is careless or is hurrying in his dissection.

4. The *junction of the cystic duct with the common should be isolated* before ligating the cystic duct. The reason for this precaution is obvious since the cystic duct can thus be ligated without jeopardizing the common duct.

5. The *cystic duct and artery should be ligated*

separately. If the cystic duct and artery are ligated together there is more danger of damaging the common duct, and of having the ligature slip off perhaps a few hours after operation. Moreover, the mass of ligated tissues with resultant necrosis is much smaller if the two structures are ligated separately.

6. The surgeon should *cut no structure until it is identified.* The importance of this precaution is readily understandable because the common duct and right hepatic artery may easily be damaged if proper identification is not made.

7. The surgeon should *ligate no artery until proven it enters the gallbladder.* Failure properly to identify arteries may allow ligation of or damage to the right hepatic artery.

8. It is usually desirable to *start dissection at the fundus of the gallbladder when adhesions are dense.* This precaution will prevent damage to structures in the floor of the operating field. When adhesions are dense, sharp dissection is almost imperative and therefore very dangerous. If the gallbladder is opened and dissection started at the fundus, the surgeon can keep his dissection confined to the gallbladder area, particularly if he has his finger in the lumen. It can usually be amputated flush with the cystic duct without endangering the vital structures in that area.

9. *Arterial hemorrhage should be controlled by pressure* on the right hepatic artery with a finger in the foramen of Winslow. When brisk hemorrhage develops it is very dangerous to attempt to clamp the bleeding point blindly through a pool of blood. With the right hepatic artery controlled by the right index finger and thumb, the field may be sponged dry of blood and the bleeding point found with gentle release of the artery. This precaution is important because a severed cystic artery retracts underneath the common duct at which point it usually arises from the right hepatic artery.

10. Always *remember that 75 per cent of strictures of the common duct are due to trauma inflicted during cholecystectomy.* It is very significant that very few strictures of the common duct are encountered in patients having had choledochostomy or cholecystostomy. This implies that in cholecystostomy the surgeon is not working deep enough to damage the common duct, and in choledochostomy, has isolated the common duct so that it cannot be damaged other than by the deliberate incision at the time for exploration.

Results

At the present time the mortality rate for cholecystectomy is probably less than 1 per cent. If figures are extended back ten or fifteen years, the rate will probably be in the neighborhood of 2 per cent. For choledochostomy plus cholecystectomy the rate now should be about 1.5 per cent and for studies extending back ten or fifteen years 3 to 3.5 per cent. In a study of causes of death following operations on the biliary tract at their hospital, Glenn and Hays[3] found that there was a decline in the number of deaths from hemorrhage and shock and intra-abdominal infections during the period between 1932 to 1950, but that there was a rise in deaths from degenerative diseases. Of the entire series, 30 per cent of the deaths were due to hepatic infection, cirrhosis or necrosis; the incidence of these complications remained fairly constant during the years through which the study was made. The overall mortality rate in their series was 1.8 per cent. In a four or five-year survey of surgical results recently made by the author[1] at Illinois Research Hospital the mortality rate for all types of operations on the biliary tract was 1.2 per cent (four deaths in 330 cases). As stated previously, in this study we had no deaths in 169 cholecystectomies performed in patients under sixty years of age and one death in fifty-four cholecystectomies performed in patients past the age of sixty, constituting a mortality rate of 0.45 per cent for cholecystectomies. Figures on symptomatic results following operation are related directly to the correctness of diagnosis, and inversely to the incidence of technical errors committed during the operative procedure. For patients having severe and typical pain in the right upper quadrant, good symptomatic results should be obtained in about 95 per cent of cases. For patients having mild symptoms including primarily dyspepsia, the percentage of good results will be no greater than 60 to 65 per cent. As stated, most of the persistent symptoms are related to erroneous diagnosis but in many instances the pain may truly have been of biliary tract origin, but the wrong or inadequate technical procedure was carried out. Residual stones constitute perhaps the most common single cause of persistent symptoms related to the biliary tract. Other causes of persistent symptoms including biliary dyskinesia,

(Continued on Page 723)

HUMORAL VS. NEURAL REGULATION OF THE EXTRA-HEPATIC BILIARY TRACT

EDWARD A. BOYDEN, Ph.D.
Minneapolis, Minnesota

IT IS indeed a privilege to participate in this hundredth anniversary of the founding of St. Joseph's Hospital and to commemorate the first successful cholecystectomy in the Western Hemisphere—the one performed in St. Joseph's Hospital in 1886 by the late Dr. Justus Ohage.

While it is somewhat presumptuous to attempt to cover thirty years work in twenty minutes, I shall try to present the more important steps leading to our present conception of the mechanism of evacuation of the gallbladder.

Modern studies may be said to have begun in 1921 with the demonstration by Rous and McMaster[31] that the gallbladder of the dog concentrates the incoming hepatic bile from seven to ten times. Previous to this, Doyon[17,18] had postulated the simultaneous contraction of the gallbladder and relaxation of the sphincter of Oddi, Meltzer[28] had attributed diseases of the biliary tract to disturbances in the law of contrary innervation of these two end organs and Lyon[26] had developed a method of "non-surgical drainage" of the gallbladder by which a moderate discharge of "B-bile" could be induced by injecting a solution of magnesium sulphate into the duodenum. However, it was the precise study of Rous and McMaster that focussed attention on the physiological importance of the gallbladder.

Two years later, this writer[4,5] was able to show that in cats the gallbladder could be completely emptied by a meal of egg yolk and cream, of which egg yolk was found to be the most effective component. The next year (1924), Graham and Cole[19] published a method of visualizing the human gallbladder that revolutionized the diagnosis of cholecystic disease and opened the way for direct experimentation with the human gallbladder. In the fall of the same year a group of workers at the Peter Bent Brigham Hospital in Boston—unaware of the earlier work on the cat—first observed changes in the gallbladder shadow "after a meal." The cholecystograms were made by Milliken and Whitaker[29] on Whitaker's gallbladder. Subsequently, this work was expanded,[34] but previous to that the writer requested permission of the group to try the effect of egg yolk on his own gallbladder. This was done[5] (p. 334) and Whitaker also published this cholecystogram[36] confirming the observation that egg yolk is the most effective food.

Shortly afterwards, by applying an engineering method to the computation of gallbladder shadows in serial cholecystograms, Boyden was able to measure the rate of evacuation of the human gallbladder after a standard meal,[6,7] to determine its normal phases of contraction in different age groups[13,14] and its behavior under various test conditions[7]—thus paving the way for subsequent analysis of its rate of evacuation in pregnancy,[20] in peptic ulcer patients[11] and those suffering from pernicious anemia.[15]

Meanwhile, in 1926, three groups of investigators,[6,21,27,37] each unaware of the other's work and employing different experimental methods, had demonstrated that active contraction of the gallbladder is the force which expels gallbladder bile. At the same time Boyden[6] had shown that the gallbladder of a fasting animal could be activated by injecting into its leg vein 10 cc. of arterial blood from a cat which was digesting egg yolk, and that marked contractions could be induced even by transferring blood from a fasting animal to a test cat, or by autotransfusion. Two years later, Ivy and Oldberg[22] discovered that an extract of the duodenal mucosa (cholecystokinin) could evacuate the gallbladder of a dog when injected intravenously.

The question then arose as to whether the evacuation of the gallbladder is regulated solely by hormones or partly by these and the autonomic nervous system. Employing the Whitaker method[37] of filling the gallbladder of an experimental animal with lipiodol, Birch and Boyden[3] sewed shielded electrodes onto the gut tract of cats and found (in animals which had recovered and lay purring on the x-ray table) that the

---

Read at the Centennial observance of the founding of Saint Joseph's Hospital, Saint Paul, Minnesota, May 16, 1953.

From the Department of Anatomy, University of Minnesota Medical School.

emptying of the gallbladder could be reflexly inhibited by faradic stimulation of any part of the gut from stomach to cecum. However, this merely demonstrated the action of the nervous system in a laboratory mammal. Accordingly, in 1934, Boyden and Rigler[16] performed comparable experiments on volunteer medical students. When a faradic current was applied to the stomach or duodenum by means of swallowed electrodes, the resulting spasm and colicky pain completely failed to interrupt evacuation of the human gallbladder as it was being recorded at 10-second intervals on the x-ray table. These experiments seemed to point to the fact that the human gallbladder is not subject to reflexes originating in the gut tract.

Subsequently, our attention was focused on the sphincter of Oddi by anatomical studies[8,9,25,32] which proved for the first time that the human choledochal sphincter develops independently of the duodenal musculature,[32] and by physiological studies on T-tube patients (Bergh and Layne)[2] which proved that the sphincter can act independently of the duodenal musculature and even be the seat of spasms producing biliary colic. However, as a preliminary step, it was again necessary to analyze the innervation of the sphincter in animals. In 1943 Schulze and Boyden[33] discovered in cats the presence of a gastroduodenal nerve that innervates the choledochoduodenal junction. The cutting of this nerve in experimental animals (Johnson and Boyden)[23] retarded evacuation of bile. Section of the right vagus, which supplies a large component to this nerve as well as to the gallbladder, produced the greatest retardation, and section of the splanchnic nerves eliminated reflex inhibition of the gallbladder.[23]

There the matter rested until Johnson[24] was able to take advantage of a series of double vagotomies being carried out on male patients in the Veterans' Hospital for treatment of peptic ulcer. Series of cholecystograms were made preoperatively and at intervals of several months, postoperatively. The efficacy of the operation was tested by the Hollander gastric insulin test which is mediated by the vagus nerves. Also due consideration was given to the fact that in ulcer patients the gallbladder is evacuated much faster than in normal individuals[11]—a circumstance shown by Rigler and Boyden[30] to be due to the faster passage of egg yolk from stomach to duodenum, as revealed by fluoroscopic comparison of seventeen ulcer patients and an equal number of controls.

In the five ulcer patients in which double vagotomy was successful, the rate of evacuation of the gallbladder, as revealed by serial cholecystograms, merely returned to the rate characteristic of normal individuals.[24] In other words, double vagotomy had merely cured the ulcer condition since gallbladder and sphincter reacted normally after section of both vagi. It was noted, however, that the fasting volume of the gallbladder in these patients virtually doubled in the course of a year. This was interpreted to mean that loss of the vagi had affected the tonus of the fasting gallbladder, so that it failed to maintain its tonus against the influx of hepatic bile. It is too early to determine whether this has clinical significance.

Assuming, therefore, that the autonomic nervous system plays little if any role in evacuating the gallbladder, one may then ask what the factors are that regulate the flow of bile into the duodenum.

In healthy individuals, such evacuation would seem to be under the primary control of hormones originating in response to the presence of activating substances in the upper intestine. These vary quantitatively in their effects. Certain foods are more effective than others.[5,7] Moreover, evacuation is speeded up if these substances are introduced directly into the duodenum.[12] In addition, certain hydragogue cathartics (differing again in intensity of their effect)[12] mimic the first phase of contraction induced by food. Thus Boyden, Bergh and Layne[10] have shown that magnesium sulphate causes progressive relaxation of the sphincter for an average period of seventeen minutes and a drop in intraductal pressure from 14 to 11 cc. of water. The same salt induces a phase of contraction of the gallbladder that lasts for an average of thirty minutes and decreases the volume of the gallbladder by an average of 43 per cent. Similarly egg yolk causes progressive relaxation of the sphincter for an average period of seventeen minutes but a drop in intraductal pressure from 14 to 7 cc. of water. The same food induces a phase of contraction of the gallbladder which lasts for an average of thirty minutes but decreases the volume of the gallbladder by an average of 71 per cent.

These experiments indicate that the hormone produced by these substances acts simultaneously on the smooth muscle (or intrinsic nerve nets) of both the sphincter and the gallbladder. As McMaster and Elman noted in their experiments with dogs,[27] "There would appear to be a reciprocal response on the part of the two structures to the one stimulus." Additional evidence for this was found in our experience with seven pernicious anemia patients.[15] After the standard meal the gallbladder shadows diminished at the normal rate but the discharged bile filled the hepatic ducts first instead of passing into the duodenum. The administration of antispasmotics did not alter the situation; from which it was assumed that the biliary outlet was narrowed or fibrosed. Nevertheless, the gallbladder contracted normally. Similarly, in the T-tube patients of Bergh[1,2] the sphincter reacted normally in the absence of the gallbladder.

Finally, the retarded emptying of the female gallbladder in pregnancy[20] and the marked reversal of rate of the male gallbladder, postpubertally,[13] suggest that hormones other than those originating in the intestine may, at times, be operative.

In the diseased tract, other factors intervene. The presence of common duct stones, toxic substances, local tumors and inflammation can give rise to an "irritable sphincter." Significantly enough, this condition can often be relieved, temporarily, by antispasmotics but not by neuromimetic drugs—as has been so well shown by Bergh.[1] Has the time not come, therefore, to give up the concept of a biliary dyskinesia that is attributable to autonomic imbalance? This postulate[35] was based originally upon experiments with laboratory animals, in which species, admittedly, nerves have a regulatory effect on the contraction of both gallbladder and sphincter. In the human being, however, the absence of reflex inhibition[16] and the negative effect of sectioning the vagus nerves[24] would seem to favor the view that autonomic interference has virtually disappeared, thereby leaving the control of evacuation of the biliary tract to humoral substances.

References

1. Bergh, George S.: The sphincter mechanism of the common bile duct in human subjects. Surgery, 11: 299-330, 1942.
2. Bergh, George S., and Layne, John A.: A demonstration of the independent contraction of the sphincter of the common bile duct in human subjects. Am. J. Physiol., 128:690-694, 1940; see also Surg., Gynec. & Obst., 70:18-24, 1940.
3. Birch, Carroll L., and Boyden, E. A.: Reaction of gallbladder to stimulation of gastrointestinal tract. II. Response to faradic excitation of stomach, small intestine and cecum. Am. J. Physiol., 92:301-316, 1930.
4. Boyden, Edward A.: The gallbladder in the cat—its development, its functional periodicity, and its anatomical variation as recorded in 2,500 specimens. Anat. Rec., 24:388, 1923.
5. Boyden, Edward A.: The effect of natural foods on the distention of the gallbladder, with a note on the change in pattern of the mucosa as it passes from distention to collapse. Anat. Rec., 30:333-364, 1925.
6. Boyden, Edward A.: A study of the behavior of the human gallbladder in response to the ingestion of food; together with some observations on the mechanism of the expulsion of bile in experimental animals. Anat. Rec., 33:201-256, 1926.
7. Boyden, Edward A.: An analysis of the reaction of the human gallbladder to food. Anat. Rec., 40: 147-192, 1928.
8. Boyden, Edward A.: The sphincter of Oddi in man and certain representative mammals. Surgery, 1:25-37, 1937.
9. Boyden, Edward A.: Hypertrophy of the sphincter choledochus. Surgery, 10:567-571, 1941.
10. Boyden, E. A.; Bergh, G. S., and Layne, J. A.: An analysis of the reaction of the human gallbladder and sphincter of Oddi to magnesium sulfate. Surgery, 13:723-733, 1943.
11. Boyden, E. A., and Berman, Theodore M.: Evacuation of the gallbladder in peptic ulcer patients. Radiology, 28:273-282, 1937.
12. Boyden, E. A., and Birch, Carroll L.: Reaction of gallbladder to stimulation of gastrointestinal tract. I. Response to substances injected into the duodenum. Am. J. Physiol., 92:287-300, 1930.
13. Boyden, E. A., and Fuller, Alice H.: Anatomy and physiology of the gallbladder in children. A cholecystographic study. Am. J. Dis. Child., 48:565-579, 1934.
14. Boyden, E. A., and Grantham, Jr., Sam A.: Evacuation of the gallbladder in old age. Surg., Gynec. & Obst., 62:34-42, 1936.
15. Boyden, E. A., and Layne, John A.: The gallbladder in patients with pernicious anemia: a study of nonvisualization and rate of emptying. Gastroenterology, 4:121-134, 1945.
16. Boyden, E. A., and Rigler, Leo G.: A cholecystographic and fluoroscopic study of the reaction of the human gallbladder to faradic stimulation of the stomach and duodenum. Anat. Rec., 59:427-447, 1934.
17. Doyon, M.: Mouvements spontanés des voies biliaires. Arch. de physiol. norm. et path., 5:710-719, 1893.
18. Doyon, M.: De l'action exercée par le systeme nerveux sur l'appareil excréteur de la bile. Arch. de physiol. norm. et path., 6:19-31, 1894.
19. Graham, Evarts A., and Cole, Warren H.: Roentgenologic examination of the gallbladder: preliminary report of a new method utilizing the intravenous injection of tetrabromphenolphthalein. J.A.M.A., 82:613-614, 1924. See also, Ann. Surg., 80:473-477, 1924.
20. Gerdes, Mande M., and Boyden, E. A.: The rate of emptying of the human gallbladder in pregnancy. Surg., Gynec. & Obst., 66:145-156, 1938.
21. Higgins, George M., and Mann, Frank C.: Observations on the emptying of the gallbladder. Am. J. Physiol., 78:339-348, 1926.
22. Ivy, A. C., and Oldberg, Eric: Hormone mechanism for gallbladder contraction and evacuation. Am. J. Physiol., 86:599-613, 1928.
23. Johnson, Frank E., and Boyden, E. A.: The effect of sectioning various autonomic nerves upon the rate of emptying of the biliary tract in the cat. Surg., Gynec. & Obst., 76:395-410, 1943.
24. Johnson, Frank E., and Boyden, E. A.: The effect of double vagotomy on the motor activity of the human gallbladder. Surgery, 32:591-601, 1952.

25. Kreilkamp, B. L., and Boyden, E. A.: Variability in the composition of the sphincter of Oddi. A possible factor in the pathologic physiology of the biliary tract. Anat. Rec., 76:485-497, 1940.
26. Lyon, B. B. V.: Non-surgical Drainage of the Gall Tract. Philadelphia: Lea and Febiger, 1923.
27. McMaster, Philip D., and Elman, Robert: On the expulsion of bile by the gallbladder; and a reciprocal relationship with the sphincter activity. J. Exper. Med., 44:173-198, 1926.
28. Meltzer, S. T.: The disturbances of the law of contrary innervation as a pathogenetic factor in the diseases of the bile ducts and gallbladder. Am. J. M. Sc., 153:469-477, 1917.
29. Milliken, Gibbs, and Whitaker, Lester R.: The clinical use of sodium tetraiodophenolphthalein in cholecystography. Surg., Gynec. and Obst., 40:646-653 (May), 1925.
30. Rigler, Leo G., and Boyden, E. A.: (Unpublished studies quoted by Johnson & Boyden, 1952).
31. Rous, Peyton, and McMasters, Philip D.: The concentrating activity of the gallbladder. J. Exper. Med., 34:47-73, 1921.
32. Schwegler, Raymond A., and Boyden, E. A.: The development of the pars intestinalis of the common bile duct in the human fetus, with special reference to the origin of the ampulla of Vater and the sphincter of Oddi. Anat. Rec., 1937. I. The involution of the ampulla. 67:441-468; II. The early development of the musculus proprius. 68:17-42; III. The composition of the musculus proprius. 68:193-220.
33. Schulze, John W., and Boyden, E. A.: The blood supply and innervation of the choledochoduodenal junction in the cat. Anat. Rec., 86:15-33, 1943.
34. Sosman, M. C.; Whitaker, L. R., and Edson, P. J.: Clinical and experimental cholecystography. Am. J. Roentgenol., 14:495-503, 1925.
35. Westphal, Karl: Muskelfunktion, Nervensystem und Pathologie der Gallenwege: Ztschr. f. klin. Med., 96: 22-150, 1923.
36. Whitaker, Lester R.: Experiences with cholecystography. Including observations on the function of the gallbladder. J.A.M.A., 86:239-243, 1926.
37. Whitaker, Lester R.: The mechanism of the gallbladder. Am. J. Physiol., 78:411-436, 1926.

PSYCHIATRY AND RELIGION

(Continued from Page 713)

ciplines, condemned as long as they do not contravene the moral and ethical principles mentioned.

The close of the discourse is of such importance that I am moved to quote it. "This is what we feel obliged to say to you. In addition be assured that the church follows your research and your medical practice with her warm interest and her best wishes. You labor on a terrain that is very difficult. But your activity is capable of achieving precious results for medicine from the knowledge of the soul in general, for the religious dispositions of man and for their development. May providence and divine grace enlighten your path."

Thus, armed on the one side with this blessing, which should go far toward allaying some suspicion, and on the other side the mellowing of various psychiatric doctrines and a closer relationship to medicine, there is hope that we might realize at least some of the precious results mentioned.

It is probable that the guests at the next centennial celebration here will not even have heard of these disagreements. People will go on with their religion; medicine will go on with its duty of healing and an important part of this healing will be in the emotional spheres, for it is as Paracelsus observed in the fifteenth century: "He who wants to know man must look upon him as a whole, not as a patched up piece of work."

CHOLECYSTECTOMY

(Continued from Page 719)

dilated stump of cystic duct, neuromata, et cetera, have been discussed elsewhere by the author.[2] Fortunately, most of these patients having persistent symptoms of biliary tract origin, following cholecystectomy, can be relieved if the proper operative procedure is performed.

Bibliography

1. Cole, W. H.: Operability in the young and aged. Roswell Park Lecture, Buffalo, February 26, 1953 (In press, Ann. Surg.).
2. Cole, W. H.: Recent trends in gallbladder surgery, J.A.M.A., 150:631, 1952; Cole, W. H. and Grove, W. J.: Persistence of symptoms following cholecystectomy with special reference to anomalies of the ampulla of vater. Ann. Surg., 136:73, 1952.
3. Glenn, Frank, and Hays, D. M.: The cause of death following biliary tract surgery for non-malignant disease. Surg., Gynec. & Obst., 94:283, 1952.
4. Graham, E. A., and Cole, W. H.: Roentgenologic examination of the gallbladder. J.A.M.A., 82:613, 1924.
5. Graham, E. A.; Cole, W. H.; Gopher, G. H., and Moore, S.: Cholecystography: the use of phenoltetraiodophthalein. J.A.M.A., 86:1899, 1926.
6. Harridge, W. H., and Helsby, C. R.: A clinical analysis of gallbladder disease. (In press.)
7. Twiss, J. R.; Carter, R. F., and Fishman, B. S.: Infection in chronic cholecystitis. J.A.M.A., 147: 1226, 1951.

WOMEN IN MEDICINE

BURGESS GORDON, M.D.
Philadelphia, Pennsylvania

ON THE SUBJECT of women in medicine, men find it difficult to mind their own business. Men started the first medical school for women in the United States, and here at this late date they again are agitating for women physicians These remarks appear facetious; yet they reveal a sincere desire to help women gain a full opportunity in all fields of medicine.

Medical education for women, in 1850, presented a challenging situation when William J. Mullen and three other men founded the institution now known as the Woman's Medical College of Pennsylvania. In that day, medical opportunities were beyond the scope of women. The background of the infant college was the neighborhood of tidy colonial architecture, floating ostrich plumes, and long voluminous skirts. The panorama inspired dignity and gentility—life for the ladies was languorous. No awful spectacle of a woman physician dashing out in high gear to answer a maternity call could be envisaged. The inspired Mullen commented realistically, "A woman, having received from her Creator the same intellectual constitution as a man, has the right to intellectual culture and development . . . and if women were properly educated, some new avenues to useful and honorable employment, in harmony with the gentleness and modesty of her sex, might be opened to her."

Today, the mode of life is changed; likewise the prerogatives of women. Those who are qualified may study and practice medicine without apology. They no longer reflect the harsh experiences of Mary Walker, who found it necessary, as Dr. Gulielma Alsop records, to wear man's attire to obtain adequate standing in the profession.

Since 1900, medical science has contributed richly to the betterment of human health through the control of communicable diseases, the elucidation of industrial hazards, the applications of chemotherapy, and rehabilitation. Implementing medical progress are numerous agencies that have mustered up forces to extend the arm of science. Increasing longevity has resulted. As Sir Arthur Newsholm remarks, "This is a response to the humanitarian sentiment against suffering."

With the increasing desire for better health, no thoughtful observer avoids the conclusion that new implementation of public health measures is essential. It is no longer sufficient for the doctor to be the healer of the sick—contrarily it is expected that he become the protector of the well individual and the community. Waste of lives is disastrous. As Dr. René Sand points out, "Governments are led to economize and cultivate this human capital." And better control of disease goes hand in hand with the promotion of national strength, a feature epitomized by Dr. Thomas Parran in the slogan of World War II: "Let's make our men as fit as our machines."

Statistical data indicate the population trends of the United States and emphasize the need for more physicians, especially women, for general practice and the specialties. The significant aspect is the disproportion between the increased birth rate, the wider participation of women in all fields of endeavor, and the number of physicians provided for their care. As for example, the national population rose from 131,669,000 in 1940 to 151,500,000 in 1950; the number of men in industry increased from 39,944,000 in 1940 to 43,268,000 in 1950, while the number of women rose from 12,845,000 in 1940 to 16,323,000 in 1950. The number of physicians in 1940 was 165,000, of whom 157,400 were men and 7,600 women. Between 1940 and 1952, 76,717 were graduated of whom 71,909 were men and 4,808 women. These figures do not reveal the number of physicians who discontinued practice or entered the armed forces, the veterans administration and government fields. It is apparent that the number for replacement and direct service to the public is relatively inadequate. A serious shortage has appeared in hospitals, both new and old. For example, in four hospitals of Luzerne County, Pennsylvania, there are only three interns; and throughout the United States at least 3,000 unfilled internships exist at the present time. More doctors must be found for all purposes.

The woman physician, by nature a home maker, fits precisely into the changing role of medical needs. Dr. Alice M. Pickett writes, "For gen-

---

From the Woman's Medical College of Pennsylvania, Philadelphia, Pa.

Read before the Centennial observation of the founding of St. Joseph's Hospital, St. Paul, Minnesota, May 16, 1953.

erations, she has dealt with the tender things of life, the helpless, ill and handicapped . . . and her sympathetic understanding, acquired through the years, has been valuable in the fields of pediatrics, obstetrics, gynecology, general practice, teaching, and administration." Apart from her skills, there are the natural qualities of a common sense manner of dealing with the patient, hospital and home. She recognizes the futility of good health without cultivating the human aspects—the behavior, personality and adjustment of the individual to his community. As scores of patients will testify, women physicians, surcharged with the miseries of disease, are ever ready to speak to the sufferer of a way to peace and comfort. I cannot relate a single instance where the ceaseless panorama of suffering has dulled their finer edge of sympathy, or where womanly traits have become lost under the pressures of scientific doctrine. Though differing from men, as God intended, women are essentially equal to men in the practice of medicine. To their virtues I am dropping manna in abundance. To their faults—well, I'm a bit blind—and besides there is neither time nor place to search out man's tribulations.

The medical contributions of women in medicine have long been recognized and fully recorded. History unfolds the pioneer accomplishments of Elizabeth and Emily Blackwell, Ann Preston and Marie Zakrzewska, and the present-day services of Drs. Catharine Macfarlane, Ellen Potter, Florence Sabin, Helen Taussig, and Martha Eliot, to mention only a few. Their quest for basic knowledge and their desire to serve medicine wholeheartedly has attracted interest and glorified the entire medical profession.

The real problem of the woman physician is her unwillingness to limit her life to practice and the financial obligations to her family. No, she assumes the heavy responsibilities of wife, mother and citizen. And in so doing, as Dr. Alice M. Pickett remarks, "She elaborates woman's basic difficulty in becoming unduly burdened." Group practice, with the opportunities for part-time participation may change the pictures of women in medicine. As Helen Leopold, writing for the *Louisville Times, remarks,* "Group practice should give time for living;" and as it helps to emancipate doctors from the bondage of their profession, women may gain the opportunity to combine marriage and a medical career, or to follow their profession with unbridled freedom. It appears the success of her medical program will depend on the ability of the woman physician to prorate her time for the varied activities of home, office and hospital.

The medical needs of the people are apparent, and the education of more doctors is necessary, but the problem is complex. It has been suggested that a greater number of students could be trained if the medical schools merely increased their enrollment and utilized for the purpose existing facilities and personnel. Fortunately, or unfortunately, as it may appear to those beyond the walls of medical colleges, the human equation takes precedence over bricks and mortar. Indeed, academic expansion *per se* cannot be upheld by the techniques of the assembly line or the contrivances that cause jet bombers to travel 700 miles an hour. Competent teachers must be trained, sought out and engaged.

And, as the teacher plays a vital role in day-to-day instruction, he must also light the way for practice and inspire as well as assist those who would undertake programs of research. Nor does his work end there. Postgraduate education depends on his sustained interest in fundamental investigation and his ability to present pertinent data to the community for practical application. No wonder there is a fantastic situation in medical education that challenges deans, faculties and administrators to the very roots of their experience and ingenuity.

It is encouraging that the interest of prominent industrialists and philanthropists has been aroused in the formation of the National Fund for Medical Education. And no presentation on the needs in medicine should fail to commend Mr. Herbert Hoover, Mr. S. Sloan Colt, Mr. Alfred P. Sloan, Jr., Mr. Bernard Gimbel and the other trustees for their vision and effective leadership. Their support may very materially influence the course of medical education and the physicians who will serve the public.

While contemplating solutions for medical needs, an important asset has been overlooked. Women physicians have not been fully integrated into the field of medical education or service. Perhaps women have accepted the age-old view that men dominate the field of medical education and there is no important opportunity open to them. And perhaps men have considered women physicians as so definitely in the minority that their

(Continued on Page 735)

NEWER CONCEPTS ON THE COAGULATION OF THE BLOOD

ARMAND J. QUICK, Ph.D., M.D.

Milwaukee, Wisconsin

IT MAY truly be said that the coagulation of blood is a subject of vital importance. Even at the very beginning of life, the Scylla of hemorrhage may bring disaster, while the Charybdis of thrombosis eventually may wreck often the sturdiest without warning. Yet withal, how little is known of this important physiological process in spite of long and ardent toil.

Historical

Several hundred years elapsed between the time that Malpighi noted white strands remaining after a blood clot had been washed and the recognition that these strands were derived from a soluble plasma protein, fibrinogen. The important concept of Buchanan that a specific agent of the blood was responsible for the conversion of fibrinogen to fibrin did little to stimulate progress until the same idea was reintroduced by the aggressive Alexander Schmidt. To him and others such as Hammarsten belongs the credit for establishing thrombin as the physiological clotting agent. Through the work of Schmidt, Pekelharing and others, it became recognized that thrombin did not exist in the blood but was formed from a mother substance, which is now known as prothrombin. Again it was Schmidt who contributed another important idea, namely, that prothrombin required for its activation an agent that he named zymoplastic substance which in modern terminology is thromboplastin. It remained only for Arthus and Pagès to show that calcium was indispensable for clotting to complete the basic facts which were established when the present century began.

Morawitz and Field and Spiro summarized the existing knowledge on the clotting of blood by the two well-known equations:

Prothrombin + calcium + thrombokinase = thrombin
Fibrinogen + thrombin = fibrin

It is of little moment now what precise interpretations these authors gave to the various clotting factors. Suffice it to say, that their simple equations furnished the most practical guide and served as the basis for methods to determine prothrombin quantitatively.

The writer, in 1935, devised a test now generally known as the one-stage procedure for determining prothrombin. The method consists in adding an excess of potent thromboplastin reagent and calcium chloride to oxalated plasma and then carefully determining the clotting time which becomes a measure of the prothrombin concentration. Almost simultaneously and independently Smith, Warner and Brinkhous also developed a method for estimating prothrombin. In their procedure, the prothrombin is converted to thrombin, and the amount of the latter measured by the speed with which it coagulates a standard solution of fibrinogen.

It was most opportune that vitamin K was discovered at the time when these two methods became available. With the recognition that vitamin K is essential for the synthesis of prothrombin, the cause of several important bleeding diseases, particularly the hemorrhagic disease of the newborn and cholemic bleeding, became apparent and the cure almost immediately forthcoming. In an incredibly short time a significant new chapter in modern medicine was completed.

The discovery that spoiled sweet clover hay caused a hemorrhagic disease by depressing the prothrombin level of the blood initiated a new phase in the study of blood clotting. The isolation of the toxic principle, Dicumarol, from spoiled sweet clover hay by Dr. Link supplied a new tool for studying prothrombin. A detailed account of the early historical developments may be found in the author's monograph on hemorrhagic diseases.[5]

In 1943 it was demonstrated that in addition to the known clotting factors another agent hitherto entirely unrecognized was essential for the production of thrombin.[6] This discovery was the result of a relatively simple experiment. It was known that the prothrombin time became prolonged in stored plasma and it was assumed that this was due to a loss of prothrombin. Signifi-

---

From the Department of Biochemistry, Marquette University School of Medicine, Milwaukee, Wisconsin.

Read before the Centennial observation of the founding of St. Joseph's Hospital, Saint Paul, Minnesota, May 16, 1953.

cantly, when to such stored plasma an equal volume of plasma from an animal in whom the prothrombin was depressed by Dicumarol was added, the resulting mixture had a relatively normal prothrombin time. The fact that the two plasmas mutually corrected each other clearly indicated that the agent which disappeared on storage was not the same as the one depressed by Dicumarol. Obviously, prothrombin was not destroyed by storage, but rather that a decrease of a new entity was responsible for the prolonged prothrombin time. This new factor was named component A of prothrombin but later renamed labile factor. At the time of its discovery, the prediction was made that a deficiency of this factor might be found clinically. Interestingly, in less than two years, Owren[4] reported such a case. While the discovery of the labile factor has not changed the fundamental concept of the coagulation mechanism, it did emphasize the ease with which an essential clotting factor can long be overlooked.

Another major advance in blood clotting was made in 1947, when it was demonstrated that the activity in blood which was generally named thromboplastin was the resultant of the interaction of a platelet factor and a plasma constituent which was named thromboplastinogen.[7] On the basis of this observation, a new test was developed which is known as the prothrombin consumption time. In this procedure blood is clotted under standardized conditions and the prothrombin remaining in the serum is determined. From this residual prothrombin, the amount of available thromboplastin in the blood can be estimated. A deficiency of either platelets or thromboplastinogen as occurs in hemophilia results in a deficiency of thromboplastin and, therefore, in a poor consumption of prothrombin. With this new test a means is now available to study quantitatively the group of diseases which can be classified under the heading of hypothromboplastinemias.

The Essential Thrombinogen Factors

Since thrombin is the keystone in the coagulation mechanism, it is imperative to know what agents are required for its formation. Experimentally and clinically, it is now well established that at least five agents are essential: prothrombin, labile factor, calcium, platelets, and thromboplastinogen. It is not unlikely that other factors will eventually be found to be required, but so far only the five named are sufficiently established to designate them as primary.

Prothrombin.—This clotting factor is accorded a position of pre-eminence in blood clotting, not because it is more important than the other basic agents, but because more is known about it. It is a plasma protein which is inactivated at about 58° C. It requires for its synthesis vitamin K. One may postulate that the enzyme responsible for the synthesis of prothrombin is composed of an apoenzyme (Æ) and a prosthetic group supplied by vitamin K (K) to form the holoenzyme (Æ K). Lack of vitamin K brings about a decrease of prothrombin production. This may occur in the newborn, in obstructive jaundice, and other conditions in which the body fails to secure a sufficient supply of this fat-soluble vitamin. Lack of apoenzyme is still hypothetical, but it satisfactorily explains certain hypoprothrombinemic states such as congenital low prothrombin which is completely refractory to vitamin K.

Much clinical interest is centered on the antivitamin K compounds of which Dicumarol is the prototype. The action of such compounds is most satisfactorily explained by postulating that they act by competitive inhibition replacing vitamin K in the enzyme system Æ K according to the law of mass action equation: $\text{Æ K} + \text{D} \rightleftarrows \text{Æ D} + \text{K}$. The resulting Dicumarol complex Æ D is inactive. By giving large doses of natural vitamin K_1, the reaction can be reversed and the hypoprothrombinemia of Dicumarol can be effectively counteracted.

Two interesting but generally unrecognized facts concerning prothrombin should be mentioned. The first is the apparent large demand of the body for this clotting factor. In twenty-four hours the quantity of prothrombin utilized is roughly equal to the total amount in circulation. The second is that in adult human blood a large fraction of the total prothrombin is in an inactive state, prothrombinogen, whereas in newborn blood, little or none of this inactive form is present, but the free or active is the same in amount as in the adult blood.[10]

Labile Factor.—Although this agent is equally as important as prothrombin, its very existence was not even suspected until the agent was discovered in the Marquette laboratory in 1943. This can be explained by the uncommonness of labile factor deficiency. It is sufficiently abundant in blood so that it rarely falls below the critical level. It may become diminished after severe liver injury, but neither vitamin K deficiency nor Dicumarol influences its concentration. Labile factor deficiency may be congenital and there is even evidence that this defect may be hereditary.[1] This clotting factor is a protein which like prothrombin is inactivated at 58°C. Whether it has any function other than its thrombinogenic activity, it is not known. Why its concentration is much greater in animal bloods such as that of the dog and rabbit than in the human likewise cannot be explained.

Calcium.—Contrary to the generally accepted view that calcium acts catalytically in the clotting reaction, the experimental evidence clearly points to the fact that it enters the thrombinogenic reactions stoichiometrically. It is likely that calcium is combined with one of the factors in the prothrombin complex. Since fatal tetany occurs at a calcium level of the blood that is still entirely adequate for optimal clotting, hypocalcemia as a cause of defective clotting is theoretically impossible.

Platelets.—Platelets do not contain thromboplastin but merely supply an agent which reacts with thromboplastinogen to form thromboplastin which in behavior is similar to the substance found in tissue extract. The platelet factor is probably a lipoid which is heat stable but deteriorates on storage.

Thromboplastinogen.—Since the evidence is fairly conclusive that the clotting defect in true hemophilia is a quantitative deficiency of thromboplastinogen, this agent is of great clinical importance. The control of the concentration of this factor in normal individuals is not known, but it apparently fluctuates widely and acquired hypothromboplastinogenemia may constitute a clinical entity that may account for a hitherto unexplained hemorrhagic state.

The Autocatalytic Reaction of Blood Clotting

Sufficient data are now available to express the over-all reactions of blood clotting in terms of chemical equations. It must be realized, however, that such equations are intended to serve as a general expression rather than as an exact and detailed presentation of the actual chemistry involved. Thus, the action of thrombin on fibrinogen is given by the simple equation: Fibrinogen thrombin fibrin. It is adequate and practical but according to recent findings is far from expressing the complete chemistry of the reaction. Instead of one step there is evidence that the process involves several including a splitting of a fibrinopeptid from the fibrinogen, thereby activating the latter and bringing about its polymerization.[2,3] While this new information is of theoretical interest, it had no immediate clinical importance. The simple equation continues to remain the best guide and the law that the speed of the clotting of fibrinogen is a function of the concentration of thrombin remains an underlying principle on which the whole concept of coagulation depends.

The equation that expresses the interaction of the factors that produce thrombin may be written as follows:

Thromboplastin + labile factor + calcium + prothrombin = thrombin. In presenting this equation there is no pretense that it is an accurate expression of the actual chemistry. It merely conveys the idea that four substances interact in a stoichiometric fashion without specifying how and in what sequence the reactions between the participating reagents occur. Of real significance is the fact that a decrease of any one of the four factors will cause a diminished production of thrombin and, if sufficient, will result in a hemorrhagic state.

It has long been known that the addition of tissue extract to blood hastens coagulation. The active agent in such extracts was first called zymoplastic substance, later thrombokinase, and in recent years more commonly, thromboplastin. It seems certain that blood contains no preformed thromboplastin, and that clotting does not occur until active thromboplastin becomes available. From the studies which were done in our laboratory, it was established that platelets and the plasma constituent, thromboplastinogen, together bring about thromboplastic activity in plasma. Significantly, however, if a potent extract of platelets is added to native plasma which has not been in contact with a wettable surface such as glass, little or no thromboplastic activity is generated; if, however, a very minute amount of thrombin is added to the native plasma, the reaction between platelets and thromboplastinogen proceeds rapidly.[9] Obviously, thrombin acting as a catalyst initiates the reaction and supplies the link in the chain reaction. Platelet extract cannot react with the thromboplastinogen in the state it exists in circulating blood. The first essential reaction in the cycle is the activation of thromboplastinogen by thrombin. As soon as this occurs, the reactions proceed unhampered to form more thrombin. The sequence of events may be summarized as follows:

1. Thromboplastinogen $\xrightarrow{\text{thrombin}}$ thromboplastinogen A (activated).
2. Thromboplastinogen A + platelet factor = thromboplastin.
3. Thromboplastin + labile factor + calcium + prothrombin = thrombin.
4. Fibrinogen $\xrightarrow{\text{thrombin}}$ fibrin.

According to this scheme, the autocatalysis is through the thrombin, and unless means exist to remove this agent promptly, even a very minute amount gaining entrance in the blood stream would be enough to clot all of the circulating fibrinogen. Nature, however, provides an ingenious device to control the reaction. Thrombin is promptly and effectively removed by the fibrin clot itself.[8] Fibrin surface adsorbs thrombin with avidity and since serum is dispersed in the fibrin reticulum, any thrombin formed is immediately removed due to the intimate contact of serum and fibrin surface. Since clot retraction disrupts this close contact between serum and fibrin, this mechanism reinitiates the chain reaction and therefore probably plays an important role in intravascular clotting.

The Relation of The Coagulation of Blood to Hemostasis

The coagulation of blood is a vital part of the hemostatic mechanism but is by no means the sole means that the organism has to achieve stanching. In primitive forms of life the reflex contraction of vessels following injury and the gluing property of irritated endothelium are sufficient by themselves to control and stop bleeding. These same reactions occur in the higher animals as well as in man and play a significant role in the control of bleeding. In the evolution of coagulation, one of the first steps is the development of a cell which possesses the ability to agglutinate, thus forming sticky masses that are utilized by the organisms to seal injured blood vessels. These primitive blood cells find their counterpart in the platelets of mammalian blood. The platelets have a threefold function in hemostasis: (1) they agglutinate forming white thrombi which may function as mechanical plugs; (2) they furnish the agent which reacts with thromboplastinogen to form thromboplastin; and (3) they generate a powerful diffusible vasoconstrictor, thrombotonin, which chemically is 5-hydroxytryptamine. Obviously, platelets have a central position in hemostasis, but their action can occur only when sufficient thrombin is available.

Thrombin is the key substance in hemostasis and true coagulability is synonymous with thrombinogenesis. It is now generally established what the primary agents are that are needed to form thrombin; and tests such as the one-stage prothrombin time, and the prothrombin consumption test, offer means for the quantitive estimation of some of these factors. The groundwork has been laid for developing a practical and integrated concept of hemostasis. Real progress in the exact diagnosis and the successful management of the hemorrhagic diseases should therefore be forthcoming.

Bibliography

1. Brink, A. J., and Kingsley, C. S.: A familial disorder of blood coagulation due to deficiency of the labile factor. Quart. Med., 21:19, 1952.
2. Laskowski, M.; Rakowitz, D. H., and Scherago, H. A.: Equilibria in the fibrinogen-fibrin conversion. J. Am. Chem. Soc., 74:280, 1952.
3. Lorand, L.: Fibrino-peptide: new aspects of the fibrinogen-fibrin transformation. Nature, 167:992 (June 16) 1951.
4. Owren, P. A.: Parahaemophilia haemorrhagic diathesis due to absence of a previously unknown clotting factor. Lancet, 1:446, 1947.
5. Quick, A. J.: The Hemorrhagic Diseases and The Physiology of Hemostasis. Springfield, Illinois: Charles C Thomas, 1942.
6. Quick, A. J.: On the constitution of prothrombin. Am. J. Physiol., 140:212 (Nov.) 1943.
7. Quick, A. J., and Favre-Gilly, J.: Fibrin, a factor influencing consumption of prothrombin in coagulation. Am. J. Physiol., 158:387-95 (Sept.) 1949.
8. Quick, A. J.: Studies on the enigma of the hemostatic dysfunction of hemophilia. Am. J. Med. Sc., 214:272 (Sept.) 1947.
9. Quick, A. J., and Hussey, C. V.: Activation of thromboplastinogen. Federation Proc., 12:222, 1953.
10. Quick, A. J.; Murat, L. G.; Hussey, C. V., and Burgess, G. F.: The prothrombin in the newborn Surg. Gynec. & Obst., 95:671-76 (Dec.) 1952.

MODERN HEALTH PROBLEMS OF THE UNITED STATES

ANCEL KEYS, Ph.D.
Minneapolis, Minnesota

THE Centennial Program of a great hospital should be a forceful reminder of the march of progress, of the differences in medical problems and practice over the years. The alterations are most obviously reflected in the physical facilities and the therapeutic tools at hand but more important are the changes in the patients themselves. The gamut of diseases to which man is heir may be the same but the relative incidence of these diseases reflects the age structure of the population as well as the enormous improvement in the control of infective and parasitic diseases. At the immediately practical level of individual diagnosis and treatment, the practice of medicine does not lag far behind the changing demands for individual medical care; competition within the profession and between the supply houses assures this. But the case is otherwise in regard to the larger issues of the health and disease of populations.

To a large extent, the whole paraphernalia of our medical and health organizations, of medical schools, textbooks, and public health systems, is slow to adjust to problems of health and disease that have changed radically in the past few decades. This is understandable but it also means that there is an urgent need for constant re-evaluation of the character and magnitude of our several health problems. And it is sensible to begin such an analysis at the most elementary level.

The most elementary criterion of the health of a country is obviously the death rate. But without further specification the crude death rate is almost meaningless. The so-called "expectation of life" is a popular method of expressing the over-all national health and it is agreeable to observe that in fifty years the expectation has increased from forty-eight to sixty-six years for white men and from fifty-one to seventy-two years for white women. Further analysis shows that this improvement in the expectation of life is primarily a reflection of better health in infancy and youth. Out of a thousand live births in 1900, about 140 were dead before the year was out. In 1949 the number was only thirty-three. But the improvement at older ages is much less impressive. This is apparent in Table I which summarizes the change in the expectation of attaining the age of 70 years.

TABLE I. PERCENTAGES OF U. S. WHITE MEN ("M") AND WOMEN ("F") EXPECTED TO ATTAIN THE AGE OF SEVENTY YEARS FROM VITAL STATISTICS FOR 1900 AND FOR 1949.

Alive at	Per Cent to Attain 70				Per Cent Gain	
	1900		1949			
	M	F	M	F	M	F
Birth	30.6	35.2	50.9	66.7	66.3	89.5
Age 20	40.1	44.6	53.7	69.4	33.9	55.6
Age 30	43.0	47.6	54.7	70.0	27.2	47.0
Age 40	47.2	51.8	56.1	71.2	18.9	37.4

It will be observed that 47.2 per cent of U. S. white men aged forty in 1900 could expect to be alive at age seventy and that, by 1949, 56.1 per cent such men had the same expectation. This is a gain of 18.9 per cent. In 1900 U.S. white women had a better expectation than the corresponding men and their superiority was still more marked by 1949. For the age of forty years the improvement in the females was about twice as great as in the males.

The data in Table I should be a cause for some gratification but we still cannot be content when barely half of our men who reach manhood can expect to reach the age of seventy. And why should American women be so much healthier than their husbands?

Comparison of the death rates from all causes for U. S. men and women to age seventy is shown on a logarithmic plot for the latest year of record, 1949, in Figure, 1.

This helps to show details in a situation where the relevant numbers cover such a large range but the particular virtue of the logarithmic plot is that on it a straight line means a constant rate of

---

Dr. Keys (Ph.D.) is Professor and Director, Laboratory of Physiological Hygiene, University of Minnesota, Minneapolis, Minnesota.

An address presented at the St. Joseph's Hospital Centennial, May 16, 1953.

Data cited here are the result of research supported in part by a grant H 10 (C 1-6) from the National Heart Institute, of the National Institutes of Health, Public Health Service and the National Dairy Council.

change. This plot shows straight and parallel lines for both sexes from thirty to seventy. One mathematical slope suffices to define the relationship of total death rate to age for both sexes, the women being constantly about five years "younger" than the man in this sense.

Now by the year 1949, in America we had reached the situation where the older biological hazards of man—starvation and contagion—had largely disappeared and the death rates over thirty were basically determined by self-generating metabolic diseases. Cardiovascular disease, mostly of the degenerative type, and neoplasms alone account for almost two-thirds of the deaths from thirty to seventy years of age. So it might be suggested that the straight lines in Figure 1 are the expression of the basic metabolic, "aging" character of man. This would correspond to the fact that the enormous progress of medical knowledge, public health programs, and in the practice of medicine, and medical care, has brought only a limited improvement in the total mortality of Americans beyond the age of thirty. But if this is the case in the United States, the richest and supposedly most advanced part of the world, what about the unfortunate people who live elsewhere? In Europe, for example, where race, climate and general culture are similar to our own?

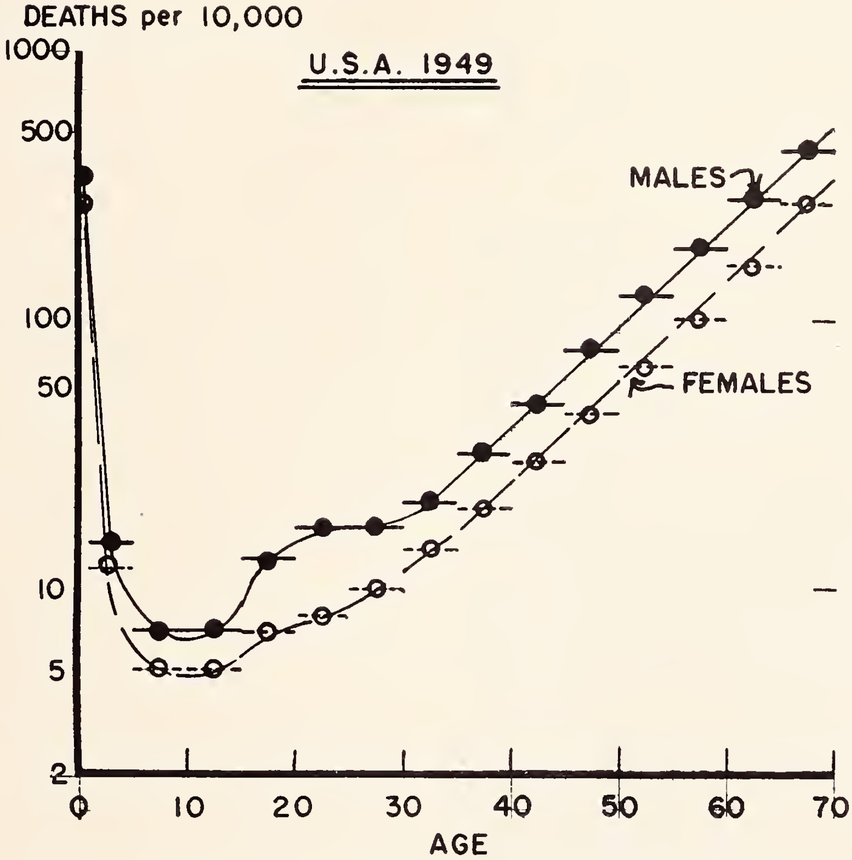


Fig. 1. Deaths from all causes, per 10,000 living persons of given age. The lines for the two sexes were drawn from age thirty-five to age seventy with parallel rulers.

Elsewhere[3,4,5] I have presented some of the current vital statistics data for various European countries as well as for Canada, Australia and New Zealand. These show the surprising, and disconcerting fact that the death rates from the total of all causes at equal ages tend to be substantially higher from ages thirty to seventy for American men than for men of many other countries of similar culture. Here a single example, that of Italy, is summarized in Table II.

The data in Table II show that from age thirty on our current mortality experience is progressively unfavorable as compared with Italy. This discrepancy is marked for men and relatively trivial for women. The effect on the numbers of survivors of these different death rates of men in

TABLE II. DEATH RATES, FROM ALL CAUSES, PER 1000 LIVING OF GIVEN AGE, FOR U. S. A. (1949) AND FOR ITALY (1948.)

Age	Men		Women	
	U. S. A.	Italy	U. S. A.	Italy
30-34	2.5	2.7	1.7	2.3
35-39	3.6	3.4	2.5	2.9
40-44	5.6	5.1	3.6	3.6
45-49	8.7	7.3	5.4	4.7
50-54	13.5	10.4	7.8	6.9
55-60	19.7	14.5	11.2	10.3
60-64	29.0	21.8	17.3	16.8

the two countries is negligible to about age fifty if we begin with equal numbers at age thirty. But the effect on survival to age seventy is not trifling. Starting with 1,000 living men aged fifty in each country, by age seventy the American group may be expected to dwindle to 573 while the Italians would be 662 strong. The Italian "health," in this regard, is very considerably better than our own. Why?

How can we explain this surprising fact that Italian men have this over-all superiority in mortality? If the vital statistics of other European countries are examined it appears that it is not so much that Italian men have a remarkably fine health record over a major part of the life span; the distressing fact is that the men in many other countries have lower mortality rates than Americans over the years from forty to seventy. The men in England and Wales, Holland, Denmark, Belgium, Sweden, Scotland, New Zealand, Australia, Norway, and even next-door Canada have notably better records than our own. But Italy is a particularly interesting example and it is illuminating to consider a few details.

Comparison of rates of deaths ascribed to specific causes is always risky but at least some possibly significant trends may be discerned if due precautions are observed and if the data are reasonably complete, as is the case in both Italy and the United States in recent years. Such comparison indicates that for many diseases there is no important difference between the age specific death rates in Italy and in the U. S. For men, the rates for intracranial lesions of vascular origin, for cirrhosis of the liver, for nephritis, for all neoplasms and for all violence are similar. As would be expected from our knowledge of the incidence of tuberculosis, the Italian death rate reported for infective diseases is considerably higher than that reported for the U. S. But the vital statistics inescapably lead to the conclusion that American men have a far higher death rate from circulatory diseases than do the corresponding Italians. For example, for men of fifty through fifty-four, the rate of deaths ascribed to diseases of the circulatory system is 5.7 per thousand in the United States as compared with 1.9 per thousand in Italy. A similar difference exists from age thirty to seventy.

Most physicians distrust vital statistics. They have seen too many cases where the death certificates recorded mere guesses—or worse. But healthy skepticism should not mean a refusal to analyze the evidence. It is easy, but not very intelligent, to dismiss the matter by saying that "heart disease" is a catch-all label for absent information and bad diagnosis or to suggest that Italian doctors do not recognize heart disease when they see it. The fact is that the statistics on heart disease in the United States and in Italy explain the otherwise inexplicable difference in the *total* mortalities.

It is particularly interesting that the big difference between Italy and America in circulatory disease mortality is in the "degenerative group," including coronary disease, angina pectoris, myocardial degeneration, chronic myocarditis, arteriosclerotic and hypertensive heart disease. Apart from this group, the mortality from other circulatory and cardiac disease is very much the same in the two countries. It is impossible to doubt that, compared with Italy, our men have a greatly excessive incidence of degenerative heart disease. Our women, on the other hand, are much less different from their Italian counterparts. For example, for ages fifty to fifty-four, the total death rate from all causes of white American women was 7.8 in 1949; for the comparable Italian women it was 6.9; for circulatory diseases the rates were 2.0 and 1.4.

It is widely agreed that for American men, atherosclerosis, the outstanding basis of most of this heart disease, is the leading health problem of our time. Argument waxes hot about the cause of atherosclerosis but there is rapidly building up a veritable mountain of evidence leading to several conclusions.

First, there is no doubt that cholesterol in the blood is involved in atherogenesis. The fact that the cholesterol is transported in the blood as lipoprotein aggregates is interesting but does not change this conclusion. And the material which

TABLE III. MEAN VALUES, FROM REGRESSION ANALYSIS, FOR SERUM TOTAL CHOLESTEROL CONCENTRATION IN CLINICALLY HEALTHY MEN IN NAPLES, AS PERCENTAGES OF THE CORRESPONDING VALUES FOR MEN IN MINNESOTA (TWIN CITIES.)

Age	Cholesterol	Age	Cholesterol
20	100	45	94
25	102	50	89
30	104	55	87
35	103	60	85
40	99		

TABLE IV. MEAN VALUES FOR SERUM TOTAL CHOLESTEROL CONCENTRATION IN CLINICALLY HEALTHY MEN IN MADRID, AS PERCENTAGES OF THE CORRESPONDING VALUES FOR MEN IN MINNESOTA (TWIN CITIES).

Age	Cholesterol	Age	Cholesterol
20	102	45	86
25	101	50	80
30	100	55	77
35	98	60	74
40	96		

makes up the atheromata is cholesterol, not beta lipoprotein or "giant molecules."

Second, the diet plays a major role in determining the amount of cholesterol in the blood. No other factor of comparable importance is yet recognized. The cholesterol itself in the diet is unimportant, at least in man, but the total dietary fats, vegetable as well as animal fats, have a dominant effect, as we have consistently found in many controlled experiments on man.[3,5,6,8]

With this in mind, it is significant that the American diet today is higher in fat than anywhere else in the world—and that includes the Eskimos.[3,4,5,11] Over 42 per cent of our calories come from fats as compared with the Italian national diet of just 20 per cent of calories from fats.

All of this being the case, it is not surprising to discover that the blood cholesterol picture in men in Italy differs from that in the United States. In the United States, at least in the urban centers studied so far—Minneapolis-St. Paul, Boston, New York, San Francisco—the concentration of the serum total cholesterol in clinically healthy men presents a characteristic and significant picture.[9] There are large individual variations but the trend is steadily upward from late adolescence until late middle age, with a downward trend thereafter. A closely similar age trend appears in the concentration of the lipoprotein-cholesterol complexes characterized in the ultracentrifuge by sedimentation rates of —10 to —20 Svedberg units.[2] In the sample of Neapolitan men studied, however, this trend is followed only in the younger men up through the thirties and thereafter the cholesterol concentration does not tend to rise further.[7] Table III summarizes the picture.

Is it coincidence that the mortality rates of men in the two countries begin to diverge at about the same age as the divergence in the serum cholesterol concentration? And is all this mainly a reflection of the differences in the habitual diets in regard to fats? The factor of relative obesity of the subjects is not involved because it was found that the Italian subjects closely corresponded to the Minnesota subjects in body fatness as judged from height-weight ratios and from measurements of the subcutaneous fat (skinfolds) in the two groups.

We have similar information from another low-fat diet country, where, in addition, many of the poor people are underfed. Table IV shows data from the poor population of Madrid and again the picture in the young men is similar to that in the U.S.A. but there is an increasing divergence after thirty years of age. The combination of a diet low in total fats and calories seems to be associated with a remarkably low level of blood cholesterol after age thirty.

Now in Spain, for the great majority of the population the diet is low in fats and meager in total quantity but the rich people, including the professional class, live very differently. Their diet is high in fat, like our own, and they eat enough of it to make their bodies at least as fat, in general, as those of Americans. A detailed study of a sample of these high-calorie, high-fat eating men in Madrid showed the cholesterol level in the blood of these rich Spaniards is at least as high as it is in Minnesotans. From age forty to age fifty-five, at least, the rich Spaniards on a high-fat diet exhibited much higher serum cholesterol concentrations than their poor compatriots who live on a low-fat diet. At age fifty, for example, the mean values for the serum from casual blood samples were 210 mg. per 100 ml. in the poor men and 265 in the rich men.

The wealthy and professional class in Spain represents only a very small fraction of the total population of the country so the national mortality rates are overwhelmingly dominated by the mortality of the general poor population. For the year 1949 the official statistics for the entire Spanish population indicate that, among men of fifty to fifty-four years, all heart diseases accounted for 18 per cent of the total deaths; the corresponding figure is 38 per cent for white American men of the same age.

Vital statistics in Spain are of dubious reliability but even casual inspection of hospital populations and the case records of leading physicians clearly indicates that coronary and related heart diseases are infrequent indeed in the general poor population but are very far from a rarity among the wealthy and professional classes.

Finally, the fact that Spain, like Italy, differs from the United States in regard to heart disease, is indicated by the sex ratio of cardiac deaths. At age fifty to fifty-four the cardiac death rate for men is almost three times that for women in the U. S.; in Spain the ratio is only 1.3 to 1.0.

Data on these questions of the diet, the blood cholesterol and the mortality from heart disease have also been collected from England. The English findings[3,4,5] indicate: (1) an average diet somewhat lower in total fats than in the United States but very much higher than in the diets of Italy and Spain; (2) serum cholesterol values resembling those in the United States; (3) for middle-aged men lower mortality rates from the total of all causes and somewhat lower rates ascribed to heart diseases. The indicated mortality from heart diseases is much more like that of the U. S. than like that of Italy.

All this evidence, and much more that could be cited in greater space, suggests a general rule that degenerative heart disease is directly related to the total fat content of the diet, the connection probably being through the effect of the dietary fats on the level of cholesterol and lipoproteins in the blood. This idea can be tested to some extent by a comparison of age-specific death rates and national diets in several countries for which reasonably acceptable data are available. For the countries studied so far there is a consistent and regular relationship between the two variables of percentage of dietary calories derived from all fats and the male age-specific death rates from forty to sixty-five years of age ascribed to "degenerative" heart disease (coronary disease, angina pectoris, myocardial degeneration, chronic myocarditis). Very much the same relationship holds when the total of all circulatory disease mortality is substituted for degenerative heart disease. The countries from which data have been obtained so far include, besides the United States and Italy, England and Wales, Canada, Australia, Sweden and Japan.

It is possible to question the final accuracy of the vital statistics involved in such analyses and it is possible to suspect errors in the dietary data. But the fact remains that, on national bases, what the physicians are labelling degenerative heart disease is closely related to what the agricultural and nutrition experts are reporting about fats in the diet. And this relationship is, in fact, in conformity with all of the previous discussion in this paper about diet, cholesterol, atherosclerosis and cardiac mortality.

As this paper was being prepared, I was privileged to see the manuscripts of two important articles from Johannesburg, not yet published, reporting findings on South African Bantu. Walker and Arvidsson[12] show that the South African Bantu, subsisting on very low intake of total fats, is strikingly different from Americans in serum cholesterol concentration resembling, in this regard, the Italians and poor Spaniards mentioned previously. Higginson and Pepler,[1] in turn, provide a careful study of post-mortem data on the Bantu from which it appears these low-fat diet, low-serum cholesterol people suffer singularly little from severe coronary artery disease and atheroma.

One further point should be noted. In the late World War several countries which were able to maintain good medical and public health systems revealed some remarkable changes in morbidity and mortality from arteriosclerotic heart disease. In Finland, Norway, and to a lesser extent in Sweden and Denmark, dietary fat decreased and within two years there was a distinct and progressive decline in arteriosclerotic heart disease (cf. e.g. 10). There was no such change in Britain but dietary analysis also showed that there was no decrease in the proportion of total fats in the British diet during the War.

Finally, it is pertinent to reflect on two sets of data and their possible relevance to our present problem of heart disease in American men. The first is the dietary trend of the United States over the past forty years. Since the beginning of record in 1909, an upward trend of fat consumption has continued, rising from an average of about 30 per cent of total calories to the current value of well over 40 per cent. In the light of all we know at present, does this trend constitute a medical and public health problem?

For the last point, it is interesting to consider the sources of our present dietary fats. By far the largest contributor is fats and oils as such, excluding butter; these account for 40 to 50 per cent of the total dietary fats. This means cooking and salad fats and oils are the main source of our fats in the diet. It is clear that there is ample room to reduce our total fat intake markedly without disturbing the real nutrient value of the diet. It would be readily possible to reduce our total fat intake by a third and still eat abundant amounts of meats, dairy products, fruits, green and leafy vegetables, cereals and eggs.

It should be observed that the main problem with which we are concerned in the present discussion is that of degenerative heart disease in the male. Information about the situation in the female is much less complete but it appears there are major differences between the two sexes in this regard, at least up to the age of fifty or a little later. At earlier ages the female tends to be protected, by some device yet unknown, from the high incidence of coronary disease which appears in men on high fat diets. Hence the apparent desirability of limiting the total fat content of the American diet is restricted, on the basis of present evidence, to adult males. It is in this segment of the population that the heart disease problem is most difficult and where the dietary effect is most clear.

In this paper there is presented only a highly condensed statement of many facts and relationships. Obviously, a great deal more research is needed before we can reach final conclusions and devise suitable application in a real program of public health. The challenge of degenerative heart disease is tremendous and, as yet, only trivial resources are devoted to a modern epidemiological approach such as indicated here. But it may be hoped that the significance of the data now at hand, and the need for further study on a greatly expanded scale, will be recognized and that appropriate action will result.

References

1. Higginson, J., and Pepler, W. J.: Atheroma and coronary artery disease in the South African Bantu. (From the South African Institute for Medical Research, Johannesburg.) To be published, 1953.
2. Keys, A.: The age trend of serum concentrations of cholesterol and of S_f 10-20 ("G") substances in adults. J. Gerontology, 7:201-206, 1952.
3. Keys, A.: Atherosclerosis—A problem in a newer public health. J. Mt. Sinai Hosp., in press, 1953.
4. Keys, A.: The cholesterol problem. Voeding, 13: 539-555, 1952.
5. Keys, A.: Diet and the incidence of heart disease. Bull. Univ. Minn. Hospitals and Minnesota Medical Foundation, 24:376-388, 1953.
6. Keys, A.: Human atherosclerosis and the diet. Circulation, 5:115-118, 1952.
7. Keys, A.; Fidanza, F.; Scardi, V., and Bergami, G.: The trend of serum-cholesterol levels with age. Lancet, 263:209-210, 1952.
8. Keys, A.; Mickelsen, O.; Miller, E. v.O., and Chapman, C. B.: The relation in man between cholesterol levels in the diet and in the blood. Science, 112:79-81, 1950.
9. Keys, A.; Mickelsen, O.; Miller, E. v.O.; Hayes, E. R., and Todd, R. L.: The concentration of cholesterol in the blood serum of normal man and its relation to age. J. Clin. Investigation, 29:1347-1353, 1950.
10. Pihl, A.: Cholesterol Studies. II. Dietary Cholesterol and Atherosclerosis. Scand. J. Clin. Lab. Investigation, 4:122-133, 1952.
11. Sinclair, H. M.: The diet of Canadian Indians and Eskimos. Proc. Nutrition Soc. (London) 12:69-82, 1953.
12. Walker, A. R. P., and Arvidsson, U. B.: Low fat intake and the age trend of serum cholesterol concentration in the South African Bantu. (From the South African Institute for Medical Research, Johannesburg.) To be published, 1953.

WOMEN IN MEDICINE

(Continued from Page 725)

services are immaterial. From my associations with the Women's Medical College, I would reply unhesitatingly that the time is long overdue when women physicians should enter more intimately into the program of modern medicine.

I believe women physicians bring the type of service that is greatly needed to bolster the resources in this period of doctor shortage. Young women with academic qualifications and scientific interest could do no better than enter the profession of medicine. They should be inculcated with knowledge that is invaluable for dealing with the particular social and health problems of our growing population. In compensation, they would find open to them the stimulating association of academic medicine and the gratifications of humanitarian works. It is believed that as women indicate their desire to study medicine, the Foundations and other interested groups as well as the medical colleges, in turn, will provide opportunities for their education. Among the doctors of the future, there should be a full complement of women physicians.

Laboratory Aids to Medical Practice

Sponsored by
The Minnesota Society of Clinical Pathologists

BLOOD BANKING IN SMALLER MINNESOTA COMMUNITIES

RUDOLPH W. KOUCKY, M.D.
Minneapolis, Minnesota

THOSE PERSONS responsible for present-day transfusion programs must be cognizant of two distinct situations, namely, the twentyfold to thirtyfold increase in the use of blood and plasma that has taken place relatively recently and the complexities of modern blood grouping and crossmatching. The modern surgeon, physician or obstetrician can and should require that an adequate supply of blood will be available when needed and that such blood will do no harm to his patient.

This great increase in the use of blood and plasma has occurred in smaller rural hospitals as well as in large central institutions. Not only has the volume of planned major surgery increased sharply in these small hospitals but also, due to mechanization of agriculture and greater highway traffic, the amount of emergency traumatic surgery has increased. This augmented amount of surgery in the local hospital has not eliminated, however, the very considerable movement of patients referred to various central institutions. Blood required by these referred patients must be replaced by friends and relatives at home. A modern transfusion program should supply this blood without requiring donors to travel long distances to the central points. Convenience and expense would dictate that the blood, not the donor, be transported from the local hospital to the patient where he is hospitalized.

It should be almost needless to point out that if the blood itself is to be shipped to the central institutions, it must be drawn under rigidly controlled conditions, such as those set up by the National Institutes of Health.

Those problems dealing with grouping and crossmatching have increased greatly in the past ten years. The technologist of today should have a clear concept of reverse (serum) grouping, 6-tube confirmation grouping, determination of subgroups of A, Rh-Hr slide and test-tube grouping, saline crossmatching, high-protein crossmatching and the use of Coombs' test as an adjunct to crossmatching. She must be able to recognize artefacts and nonspecific interferences. She must know how to provide blood for emergencies. Finally, she must understand why and how transfusion disasters occur. No transfusion program is safe in spite of any amount of blood on the refrigerator shelf if the technologist cannot cope with these laboratory problems.

These needs have been apparent for some time but until recently very little could be done to help the situation. With the organization of the Minneapolis War Memorial Blood Bank, however, there materialized an opportunity for great assistance to rural blood banks. Apprehensiveness of the Hennepin County Medical Society over possible political repercussions in the state organization and hesitation of the bank's executive committee concerning possible unfavorable financial obligations did exist. After careful study, both groups accepted these risks and gave their permission for the Minneapolis bank to proceed with the project of assisting rural blood banks. Dr. G. Albin Matson, director of the central bank, has devoted a tremendous amount of time to this program. Dr. A. H. Borgerson of Long Prairie organized the first rural blood bank of the affiliated system in 1950.

The small rural banks do not have difficulty in getting blood. An adequate stock for routine use can be easily maintained, and blood for emergency coverage is available from groups of standby donors, often spoken of as "walking blood banks." The details of procurement of donors vary somewhat in the different communities. At present, a total of nineteen community banks are affiliated with the Minneapolis War Memorial Blood Bank; space does not permit inclusion of a list of these banks but it can be obtained by communication with the central organization. A personal visit or at least a telephone call to a few of these banks is recommended for anyone organizing a program within his community.

Direction of the organizational phase of these plans for procurement of donors must remain with the medical group, but essentially all of the actual work and the subsequent maintenance of the project can be done by committees representative of various civic organizations.

A relatively large inventory of blood is maintained so that the local bank is thoroughly reliable. Blood unused within seven days is shipped to the Minneapolis War Memorial Blood Bank to be credited to the local rural bank.

This credit is used in a number of ways. The blood may be exchanged for irradiated liquid plasma. This plasma is controlled by the community physicians and hospital, and is commonly assigned to the hospital and also to physicians' cars, outlying physicians' offices and to sheriffs' and highway patrolmen's cars. This credit at the central bank may be used to supply blood at the various hospitals to which the community's people may be referred. It is used to provide blood for local people who become ill while traveling in distant parts of the country. The Minneapolis War Memorial Blood Bank acts as the clearing house in these activities. The transactions are carried out by wire or letter and actual shipment of blood is reduced to a minimum. Finally, the credit is used to provide rare types of blood or, more important, selected bloods in cases of crossmatching problems encountered.

The local procurement of blood, the shipment of blood and the management of credits are relatively easy and simple parts of the project. The introduction of standard methods, both those pertaining to biologic control and those dealing with typing and crossmatching of blood, is much more vital and also much more difficult.

Each technologist handling transfusions in the affiliated hospitals must come to the Minneapolis bank for indoctrination into every phase of blood banking. She learns the minimal requirements of the National Institutes of Health and of the American Association of Blood Banks. These girls, the equipment, the records and even the quarters where blood is drawn and processed remain under the control and supervision of both the Minneapolis bank and the National Institutes of Health. The rural banks are visited by both the director of the Minneapolis bank and a representative of the National Institutes of Health. In addition, blood received in the central bank from the affiliated banks is always inspected and the laboratory work done at the affiliated bank is repeated. This serves as an excellent check on the type of work done in each bank.

The technologists are urged to call or write to the central bank about their problems, to send specimens for confirmation or assistance in difficult cases and finally to return to the central bank for a week or two every year. It is hoped that some day the central bank can have one of its technologists go to each rural bank for a few days at a time to bring new methods and new ideas.

Emergencies cannot be foreseen. The few units of blood of each type customarily kept in small blood banks will not be sufficient when an emergency suddenly demands the use of 10 to 20 units. In such cases, it is not practical for blood to be hauled in from a distance. It is inevitable that every small hospital blood bank will be called on sooner or later to draw blood from local donors for an emergency. To do this properly, the technologist must have the equipment, the quarters and especially the experience to draw the blood quickly and efficiently and under stress. The day-by-day drawing of blood for routine use is the best insurance that this knowledge and equipment will be available in emergency cases.

Certain desirable side effects arise from a well-functioning community blood bank. The concept of blood banks as a part of modern hospitals and the modern practice of medicine is well fixed in the minds of the general public. A locally organized and locally controlled blood bank brings this phase of modern medicine to the community. By supervising and controlling this part of their practice, the community doctors and the community hospital gain in stature and prestige.

* * *

This is the seventh in a series of editorial reports sponsored by the Minnesota Society of Clinical Pathologists and designed to foster closer relationships between laboratory physicians and their colleagues. The administration of blood and of volumetric substances as blood substitutes has become almost a separate specialty in modern medical practice. The pathologist has played a vital part in this expansion because it is only through constant research and the betterment of laboratory procedures that the present degree of safety in use of blood has been attained.

It is important that adequate facilities for transfusion of blood be as widely available as is possible. The activities of Dr. Koucky, Dr. Matson and their associates have extended the opportunity for such service to a considerable number of communities throughout the state. It is hoped that this program can be expanded.

George G. Stilwell, M.D.,
Chairman, Editorial Committee

Mayo Clinic
Rochester, Minn.

Case Report

SPINAL INJECTION OF BLOOD TO LOWER BLOOD PRESSURE IN ESSENTIAL HYPERTENSIVE PATIENTS

Report of Two Cases

J. J. HEIMARK, M.A., M.D.
R. L. PARSONS, M.D.
Monterey, Minnesota

A WELL-KNOWN observation among the medical profession is that many hypertensive patients who sustain a severe cerebro-vascular accident and survive, eventually develop a normal blood pressure. It is equally well accepted by the medical profession that the cause of the blood pressure's dropping down to normal in these same cases, is quite unknown. The authors of this report have wondered if introducing the blood of these essential hypertension patients into the spinal canal before they sustain a cerebro-vascular accident, might eventually have the same lowering effect on the blood pressure as it would had they had a cerebro-vascular accident. Immediately, many unknown problems presented themselves. In order to circumvent these unknown problems, we naturally thought of carrying out the tests on animals. However, immediately the question arose—how can one produce essential hypertension in animals? Hypertension can be produced in animals experimentally, but this form of hypertension is entirely different from what we know as essential hypertension. A new problem to produce essential hypertension in animals presented itself, a problem we felt we could not solve. The experimentation on animals seemed impossible in view of present known facts and therefore offered no immediate encouragement.

We recalled the observation on patients who had had accidents of different kinds which produced a bloody cerebro-spinal fluid as a result of the accident, and who suffered no deleterious after-effects from having had a bloody spinal fluid *per se*. In due time, the bloody spinal fluid cleared up and the patient suffered no ill after-effects.

It also occasionally happens that in performing a spinal puncture, blood enters the spinal canal and no ill after-effects are observed. Ventriclo and spinograms for diagnosis, and spinal anesthesia have been used for a long time. Neuro-surgeons operate on the spinal cord and brain with impunity. Medical as well as neurological textbooks describe no pathology, nor entity, nor syndrome, that is attributed to a bloody spinal fluid *per se*. In discussing the idea of injecting the patient's own blood into the spinal canal for hypertension with able clinicians, neurologists and a neuro-pathologist, they related that from their observations they could not recall any residual pathology produced by the blood in the spinal canal *per se*. This statement from these able men was indeed encouraging.

The summing up of the already mentioned observations on blood in the spinal canal, plus this final statement from these men gave us further encouragement to finally test the idea directly on hypertensive patients. Since there was no guide to follow, we naturally proceeded cautiously. The patient was admitted to the hospital in the morning without breakfast, put to bed, and allowed to rest at least an hour before the spinal puncture was made and the hypertensive's blood injected into the spinal canal. The patient remained in bed with the foot of the bed elevated until the next morning. Blood pressure readings were taken at different intervals during the day. By the following day when the patient was discharged, no ill after-effects had been observed, nor did she have any complaints differing from those on admission. In the following two cases described, the patients remained free of any ill after-effects following the intraspinal injection of blood, during the entire course of the tests. The syringe for aspirating the blood was not moistened with citrate solution. One of us performed the spinal puncture, and the other then withdrew the blood from the arm, and little time was then lost in injecting the blood into the spinal canal. At no time was the spinal fluid observed to be discolored from the previous blood injection; neither did there appear to be any increase in the spinal fluid pressure. Each blood injection seemed to be as non-disturbing to the patient as a spinal puncture for diagnostic purposes. The first injection in each case consisted of 1 cc. of the patient's own blood.

Case Reports

Case 1.—Mrs. J. F., aged sixty-three, the mother of several grown children, retired from the farm several years before, because of a blood pressure that varied from 200/120 to 240/140. There was no appreciable drop in the blood pressure after moving from the farm to a neighboring town for rest and quiet. On June 17, 1952, she had her first spinal injection of 1 cc. of her own blood. The blood pressures during her hospital stay were recorded as follows: 190/120, 218/120, 220/120, 212/118, 180/95, 180/90, 170/80, 170/80, 180/110.

On June 21, 1952, she had her second injection of 1 cc. of her own blood into the spinal canal. The blood pressure readings for that stay were as follows: 238/120, 240/120, 210/115, 194/96, 172/100, 172/90, 172/88, 172/68, 180/80, 184/84, 200/100, 190/100, 202/120.

On June 25, 1952, she had her third injection. This time 2 cc. of her blood was given and the blood pressure was recorded as follows: 242/130, 238/130, 246/140, 246/128, 238/126, 162/98, 220/120, 248/134, 250/134, 250/132, 190/130.

On June 30, 1952, she had her fourth and last injection. This time 4 cc. of blood was given. The blood pressure readings for the stay were as follows: 244/178, 254/140, 254/134, 274/138, 260/138, 248/150, 246/138, 240/138, 228/140, 214/80, 216/100, 210/110, 216/130, 210/127.

Case 2.—Mrs. E. S., aged thirty-eight, the mother of two children, lives in town. She had a long record of fluctuating blood pressure that ranged from 220/130 to 240/130. On October 10, 1952, she was given her first 1 cc. of blood into the spinal canal. Her day's blood pressure readings were as follows: 175/125, 160/100, 155/100, 166/98, 150/90, 170/110, 162/108, 160/112, 160/110, 168/112, 166/108.

On October 17, 1952, she had her second blood injection of 1 cc. of blood. The blood pressure recordings for the stay were as follows: 180/112, 142/88, 164/112, 150/100, 172/110, 144/90, 150/98, 132/80, 162/94, 160/120.

On October 30, 1952, she had her third injection, this time 2 cc. of blood was given. The blood pressure readings were as follows: 170/116, 188/118, 156/96, 128/74, 156/86.

On November 20, 1952, she was given 4 cc. of blood. The delay from the last injection on October 30, was due to the polio epidemic that was so prevalent in the state. The blood pressure recordings were as follows: 135/90, 180/100, 140/88, 120/80, 170/110, 160/100, 152/102, 120/88, 124/84, 166/118.

On December 2, 1952, she was given her fifth and last injection of blood. This time we gave 5 cc. of blood. The blood pressure recorded as follows: 180/132, 152/96, 164/100.

Discussion

These two cases have been diagnosed as essential hypertension as we understand that classification. The follow-up on Case 1 was not too satisfactory. On July 30, 1952, when the patient reported to the office, her blood pressure was 200/106. On September 30, 1952, it was 190/96. No further readings have been recorded. She volunteered the information she felt so different that she believed it was not necessary to report further. That she was less tense and calmer in every way, was quite evident. Her husband also commented on that condition. The pulse was likewise in accordance with that feeling on her part. She was quite sure she would continue to improve. She wanted to return to their farm this spring as she felt so much better. They have since returned to the farm. Indirectly, we have learned that she continues to feel improved.

The second patient has been very co-operative. Her blood pressure sixteen days after the last injection of 5 cc. of blood was 160/90 on December 18, 1952. On January 19, 1953, it was 148/90. February 12, 1953, it was 150/96. The same observation was made on this second case by both the family as well as by us. There was that very marked reduction in the nervous tension as well as increased calm so very noticeable in her behavior. The same was also true in regard to the pulse. The full bounding pulse was absent. If this absence of the tension and strain continues, it would seem logical to assume that the blood pressure will continue to drop to a still lower level in time to come. The second patient stated she was now attending church and was again able to mingle with crowds, something she had not been able to do for a long time. Our impression has been that if the injection of the hypertensive's blood into the spinal canal would simulate a stroke it would be some months before it would show any appreciable effect. The little improvement that we have observed seems to carry out this impression. If this should be so, it would appear that the blood so injected would have what might be termed a "self-immunizing" effect on the blood pressure.

Again, many questions present themselves. Possibly we were too cautious in the amount of blood we injected each time. Since there is around an average of 150 cc. of normal cerebro-spinal fluid in the central nervous system, it is possible that a larger amount of blood could have been used each time. Maybe more injections should have been given. But having no guide to direct us, we wanted to stay on very conservative ground. Well do we realize that no definite conclusions are justified from our experience with these two patients who have been reported. There are, however, certain aspects which are encouraging. The one observation that really stimulated us to report these two cases was the very noticeable calm and absence of tension in both of the patients following the treatment. Possibly the subsiding nervous tension and return to calm is a forerunner of the drop in blood pressure, even as the gradual drop in temperature and pulse rate observed in certain infectious diseases is a forerunner of improvement in infectious cases.

If beating the hypertensive cerebro-vascular accident to the draw, so to speak, could be accomplished by injecting blood into the spinal canal before such an accident should occur then we would have a comparatively simple therapeutic procedure for a disease for which at present we have no specific treatment. We believe that our experience indicates the desirability of further research at a center where much material is available and full time can be devoted to provide an evaluation of the procedure. It is not always convenient to carry on an extra program of extreme interest such as this, in addition ot the full day's work of a rural practitioner.

Tuberculosis is a completely unnecessary disease. It is a communicable disease caused by a specific micro-organism. Money spent on its control under the guidance of competent administrators is more than returned to the general economy through eliminating loss of production by those so protected and through converting tax dollar consumers into tax paying citizens. Although every person must die eventually of something, tuberculosis definitely is not included in that group of inevitable fatalities. Desirable though it is to spend money on research and control programs for heart disease and other non-communicable public health problems, it is poor economy to do so at the expense of tuberculosis control programs. Tuberculosis control, therefore, should continue to receive individual support from appropriating bodies, public health administrators, and the general public.—James E. Perkins, M.D., *Bulletin of the NTA,* April, 1953.

MEDICAL HISTORY OF THE COUNTY OF YELLOW MEDICINE

MILDRED B. LEE
Granite Falls, Minnesota

(Continued from the June issue)

First settlement was made near the site of the Agency, where half ruined buildings furnished some building material. Part of Dr. Wakefield's house was still standing and habitable and the Olds family moved into it for what was to be a long period of residence. Eventually Mr. Olds rebuilt the two-story brick house along its original lines, and it stands today, the oldest house in the county.

Lacking other building materials the first settlers built their houses of what was at hand; thick prairie sod, a few logs, and earth. The houses were of two kinds, dugouts and sod houses. The construction of a dugout is described by Gjermund O. Homme, an early settler who came in 1866, as follows:

> "First they dug a pit about five feet deep with a deeper pit in one corner to be used as a cellar or "cold well." After the pit was dug they fitted two logs, one on top of the other, about the edge, then fashioned poles across the top, and over this was put a covering of slough grass. On top of the slough grass went a couple of heavy layers of sod. That was a dugout, and that was the home common to this section of Minnesota in the early days." (Interview, *Granite Falls Tribune,* February 24, 1949.)

In 1895 a dugout of this description was still in use (for storage purposes) on the farm of Frank E. Bentley, in Rosewood Township, Chippewa County. It was about nine feet wide and ten or twelve feet in length, and was entered by a low door set in a wooden frame in the earth, and led down by stone steps to a floor of packed earth. Ventilation was supplied by the door and the chimney, and it was as nearly weather tight as anything could be.

> "The sod house" according to Rose, "was a little more pretentious and was all above ground. It was built of sods cut from the prairie, laid much the same as stones. The roof consisted of a rough frame of poles and a small window." (History of Yellow Medicine County.)

The early settlers found an abundance of fruit, nuts, berries and flowers which have since vanished entirely from the scene—wild plums and wild grapes, strawberries, gooseberries, chokecherries, huckleberries, hazel nuts, June berries; deep pink and yellow flowers resembling phlox, red prairie lilies and tiny blue grass flowers. The dandelion was not native to the country; it was imported by the settlers to furnish the "greens" for their tables. In the blooming season the dugouts could scarcely be distinguished in the vast expanse of grass and flowers.

Yellow Medicine was the first townsite to be platted. It was surveyed by George E. Olds and platted by John Winter in 1868. It was located on the south bank of the Yellow Medicine River on a part of what is now the Northeast Quarter of the Northeast Quarter of Section 31 and the Northwest Quarter of the Northwest Quarter of Section 32 of the fractional Sioux Agency Township. In the same year Robert H. Miller and T. Prentice Hill came to the county in search of possible water power sites, and filed on claims adjacent to Granite Falls. These claims were passed on to Henry Hill and Orange S. Miller, who platted the townsite of Granite Falls and built the first houses there; Hill in East Granite Falls, and Miller on the west bank of the river. The house built by Henry Hill eventually came to be the first hospital in the city of Granite Falls.

The first townships were organized while Yellow Medicine was still a part of Redwood County. In 1866, the Redwood County Board set off Yellow Medicine Township (of which Sioux Agency was a part), then Ree Township (later renamed Normania), Sannes (Sandnes) and Stony Run.

The inhabitants of these townships joined with new settlers in the western part of the county to agitate for the creation of new political units, although the population of the area was still small and scattered. A petition was circulated for the separation and creation of Yellow Medicine and Lac qui Parle Counties out of the western portion of Redwood, and this resulted in an act passed by the legislature and duly ratified by the voters in November, 1871.

The first county commissioners were John Winter, Ole O. Lende, and Leonard Hazelden, and they met for their first Board meeting on January 1, 1872, in a small brick building in Yellow Medicine City. The principal business transacted, according to the minutes, was the relief of the needy. The Board authorized payments totalling $190.00 to four individuals, and the expenditure of $25.00 "under the supervision of Commissioner Leonard Hazelden" for the benefit of one Maria Oleson who was "destitute of the necessaries of life."

Yellow Medicine City was designated as the County seat, for it was the largest of the settlements. But the choice was not considered a permanent one, and the villages began to compete for the honor in good natured rivalry. Governor Horace Austin and Park Worden owned a likely location at Minnesota Falls and there they at once platted a townsite. Water power could be developed there as well as at Granite Falls, and it had the further advantage of being "head of navigation," for steamboats then ascended the Minnesota and often touched at Minnesota Falls. By 1873 this village had stores, a flour mill, a saw mill, a blacksmith shop, a law office and several saloons, and a pontoon bridge to give access to the north bank of the river.

At Granite Falls Henry Hill was offering a free lot to anyone who would build and settle on it, and making plans for a dam at the falls and a flour mill. A ferry was put in operation on the river below the falls, and wagons loaded with wheat grown in the county converged at this point. While awaiting passage across the river they would form into caravans for the long journey to the nearest markets, each many days distant by horse and ox team. A trip to market and back required about a week's time. Food was usually taken along, and the nights were spent in the open. For several years New Ulm and New London were the nearest railheads.

During the early years mail was brought to the various post offices which served the scattered inhabitants by stage from Redwood Falls. The stage stopped first at Yellow Medicine City, then at Vineland, Stavanger, and on to Marshall. Later it was brought from Willmar to Granite Falls, then Vineland, Stavanger, Marshall, and Redwood Falls. Sometimes the stage would bring passengers also. Arrival of the mail was the event of the day, as described in the *Granite Falls Tribune:*

> "We recall the time, years ago, when the post office was kept across the river. The few settlers here then looked anxiously for the mail to come down the hill on its return trip from Willmar. When the team was spied a small boy was despatched to bring the mail over from the Post Office after its delivery. It would consist perhaps of a half dozen papers and a letter or two. The office was kept in the store run by Mr. George Daniels. There were perhaps a dozen boxes marked alphabetically, and the caller had only to reach around to get his mail. The postmaster was paid something like $12.00 a year. No massive vault and iron safe was required to secure the money and postage stamps; a cigar box was quite sufficient."

Railroad lines were now reaching into the state, but progress was slow, and often the work was unnecessarily delayed. The Hastings and Dakota railroad completed its line to Glencoe in 1873. In the same year the Winona & St. Peter pushed its way as far north as John Swenson's little claim shanty store which stood on the present site of Canby. For some time John Swenson had a post-office at that point, and he had given it the name of Canby in honor of General E. R. S. Canby who was killed in the west while attempting to negotiate peace with Indian tribes. Although the line was completed no service was begun until 1876.

Settlers were steadily arriving. They came on trains to the nearest railhead with stock and household goods, then went on foot or by team to the point of settlement; or they came from the East and South in covered wagons, or other conveyances, even on foot. Norwegians had come into the county as early as 1866, but the real wave of Norwegian immigration did not begin until 1870. Then they came, wave after wave, until the nationality outnumbered all others. In 1880 there were more than 2,000 Norwegians and only 198 Germans among the foreign born.

Among the new settlers attracted to the county were two members of the medical profession, Dr. E. N. Falk and Dr. William M. Stratton, who came to Minnesota Falls in 1873. Dr. Stratton came from Ortonville where he had begun his medical practice shortly after graduation from college. Of Dr. Falk very little is known. Both doctors were graduate pharmacists and soon collaborated in establishing a drug business in connection with their practice. And to help promote the interests of Minnesota Falls in its campaign for the county seat honor they also founded the first newspaper in the county, the *Minnesota Sentinel.*

A few copies of this paper are still in the files of the Clerk of Court of Yellow Medicine County. It was a six-column folio, the two outside pages printed locally and the inside pages of patent "filler." Some of the local advertisements are in the Norwegian language, indicating the extent of the Norwegian penetration in this remote region. The first issue appeared October 1, 1874.

In these papers we find professional cards of Dr. Stratton, Dr. Falk, the lawyers, Gorham Powers, W. E. Cook and C. A. Shannon. It is from this source that we also learn of a doctor at Granite Falls, Dr. N. M. Smith, although this title is not given him in any issue. He is simply referred to as N. M. Smith. According to Rose's History Dr. N. M. Smith lived in East Granite Falls in 1873; in 1874 a drawing shows his house in West Granite Falls about where Third Street now intersects Ninth Avenue (the Stoppe residence).

Dr. Smith was engaged in a controversy with the *Granite Rock,* first newspaper to be established in Granite Falls. The *Granite Rock* had printed comments upon Dr. Smith's methods which he considered libelous, and promptly had Editor Hogue clapped into jail. The editor succeeded in posting bond, and retained W. E. Cook for counsel. The case was scheduled for trial before the justice in Minnesota Falls, in the week of August 7, 1875. The following account of the trial is taken from the *Minnesota Sentinel* of August 10, 1875:

> As announced in the *Sentinel* last week, the trial of Smith against Hogue for libel took place in our Justice Court Thursday. The defense had a number of witnesses sworn to substantiate the statements made by the Rock in relation to N. M. Smith. They all seemed to have "cause to mourn" that they had ever beheld the face of the plaintiff. The testimony of the defense all seemed to verify the truthfulness of the song of the Immortal Burns that "man was made to mourn." Two physicians were called as expert witnesses to define the general acceptation of the term "unprincipled quack," but the attorneys for the plaintiff objecting, and being sustained by the court, it was determined to let that matter rest with Bovier, which relived (sic) the experts of the terrible necessity of defining quackery. They were next interrogated in regard to what they knew about "tonka beans," which was one of the main figure heads of the trial. The impression prevailed after they were duely (sic) examined that they were more conversant with the properties of navy beans. Mr. M. Gould, the druggist at Granite Falls, was brought to the witness stand to identify some prescriptions in his files that were written by the plaintiff, which were turned over to the expert witnesses. We believe the doctors were united in their opinion that they were not written according to "Hoyle" or "Gunter." One of the witnesses was called to the stand to testify to the competence of Mr. Gould as a druggist, but we believe the attorneys recalled that Gould run the "Reliable Drug Store" at Granite Falls, therefore it was not necessary for the expert to testify to his reliability as a druggist. The examination ended here, when the attorneys argued the case."

In the September following the trial the *Granite Rock* was sold at Sheriff's sale, and was succeeded by the *Granite Falls Journal* which purchased its stock and equipment but disclaimed all liability for the *Rock's* debts or policies. In the files of this paper are found professional cards of Dr. N. M. Smith, Eclectic Physician, who "will furnish all remedies which he prescribes."

In 1874 Granite Falls became the county seat by virtue of a legislative act which was duly ratified by the voters. Henry Hill donated a site, and the citizens raised enough money to build the new Court House, a building now in use on Tenth Avenue as a dwelling. To make doubly sure this effort was not in vain some Granite Falls partisans seized the county records and hid them until such time as the transfer could be made. The building and grounds were formally approved and accepted by the County Board in March, 1876. The Board also decided upon a levy of $600 for the poor fund, and provided that there should be no parties or dancing in the new court house.

Dr. Cyrus P. Fuller was the next doctor to locate in the county, and he opened offices in Granite Falls in 1877, "1 door south of drug store." He was also an experienced druggist, having operated a drug store at Hastings, Minnesota, both before and after taking medical training. In March, 1877, he was appointed the first County Physician, and in December his work won him this accolade from the local bard: (*Granite Falls Tribune,* December, 1887, reprint from issue of December, 1877).

"Dr. C. P. Fuller next we find,
And his medicines are pure,
If administered as ordered
They never fail to cure.

And Dr. Fuller as you all know
Is a blessing in our town,
No matter what your suffering from
He says "I'll make you sound."

To extract a tooth, trepan a skull,
Or set your limbs in motion,
I've heard it said he'd do it well
And use no sleeping potion."

The reference to a sleeping potion is interesting, in view of the number of cases of drug addiction found in these years.

The hopes of the citizens of Minnesota Falls for the future of that settlement were blasted both by the designation of a rival city as the county seat and by the failure of the Hastings and Dakota Railroad to build its line to that point. By 1878 the railroad line was completed to Granite Falls, and the first train rumbled over it in the late summer. Among the citizens who deserted Minnesota Falls for the more promising county seat town was Dr. William M. Stratton. He went into partnership there with Dr. C. P. Fuller, as appears from accounts filed against the estate after Dr. Fuller's death, on August 17, 1879, of blood poisoning. These accounts are for drugs and for livery hire for the two doctors and are supported by the affidavit of Marion Gould that they were partners.

Another doctor who located in Granite Falls in 1877 was Dr. Henry G. Townsend who opened offices in his home "opposite E. J. Fitch's Hotel" in East Granite Falls. He was a homeopathic "physician, surgeon, and obstetrician" who promised "special attention given to cronice (sic) diseases and diseases of women and children." After five years in Granite Falls he removed to Canby where he had an office "1 door south of P.O." and "will hold himself in readiness to attend calls at all hours, night and day." He also practiced in small settlements west and south of Canby.

At that time the medical profession was already well represented in Canby, with Dr. M. G. McLean and Dr. J. T. Billington in residence. Dr. McLean is a shadowy figure, for only a few items remain to show his existence; but Dr. Billington was in and out of County for many years, and is amply documented both by records and in the recollections of descendants now living in Canby and others who knew him. In 1879 Canby is reported as having a population of 110 people and twenty-two buildings.

The seventies were years of hardship in the county. A most disastrous prairie fire destroyed crops and homes in 1872, and the winter that followed was one of extreme severity. It was in that winter that Albert B. Sweet (later Dr. Albert B. Sweet of Hanley Falls) teaching school in Brown County, saved the lives of his pupils during the two days they were marooned in the school house by the great blizzard. The crops planted that spring were devoured, just before harvest, by clouds of grasshoppers which destroyed every vestige of vegetation over a wide area. This disaster was repeated in 1874 and 1875. The worst infestation was in 1876 when practically all the crops in the county were destroyed and the people were in such poverty that public aid was furnished them from state funds. In March, 1877, the County Board offered "premiums" for the best grasshopper-catching machines—first premium $40, second premium $20, third $10, all machines to be ready by May 4. Prizewinners were to permit the use of their designs free of charge by other settlers. The inventiveness of the settlers was not equal to the occasion, however; the machines offered were considered of doubtful value, and so the "premiums" were reduced to $15, for Henry Homme, the first prize winner, $10 to Anton Haroldson, and $5 to Charles Mooney.

During the grasshopper years the population of the county declined as many discouraged settlers gave up their lands and left the country. But in 1877 nature's splendid balance-and-check system came into operation; a tiny red parasite appeared to feed upon the grasshopper eggs, and the damage to the 1877 crop was light. The faith of the settlers in their new land had been sorely tried, but 1877 was the last of the "grasshopper years."

Death records of the county show that in 1879, and 1880 and 1881, diphtheria was prevalent in the eastern part of the county. They also seem to bear out Dr. Billington's statement that "Canby is the healthiest place I have even been in," for it escaped the epidemics of diphtheria, smallpox, and other serious communicable diseases from which the population of the eastern portion of the county suffered.

In 1879, Dr. Florado H. Wellcome settled in Granite Falls. With his very attractive wife he spent the summer in the home of J. S. Pound in East Granite Falls. In 1880 his brother-in-law, Dr. Franklin Judson Cressy, came from Howard Lake to open offices in the Neste building. During the epidemics of those years the doctors were busy night and day, and became well established in the community.

The townsite of Canby had been platted by the railroad in 1876, and that part of the county was attracting new settlers.

Dr. Herman E. Farnsworth, a young man of twenty-three years who had just finished his medical training, settled in Canby about 1880. At first he was in partnership with Dr. M. G. McLean. In 1881, Dr. Farnsworth was called to attend Michael J. Dowling, one of the victims of the great storm of October 15, 1880.

This storm was one of the severest and most disastrous ever to strike the area. It began after weeks of mild fall weather, on a day which dawned mild and sunny. People went to town, stock ranged the fields, and winter seemed many weeks away. In the afternoon the temperature began to drop and the snow was soon falling in thick, clinging flakes that covered all objects and blotted out all distances. The sky seemed to close in upon the earth like a great smothering cup. The wind came up in furious assault and soon a storm of blizzard proportions was under way.

On that day Michael J. Dowling, a homeless lad of fourteen who was working as a farmhand near Canby, went to town. In the afternoon he arranged for a ride home with two men who would be driving his way. When the party set out the two men were on the wagon seat and the boy in the wagon box behind. Before long the men found the storm so blinding that they decided to let the horses have their heads and find their own way home; the eager animals were soon making a beeline for home in complete disregard of the comfort of those riding in the wagon. As the wagon bounced over plowed fields in this headlong flight young Dowling was thrown out, and the men, a little befuddled with the day's round of sociability in town, did not notice that he was gone until they reached home.

Left alone upon the prairie in the blinding storm Dowling wandered for hours in search of shelter. Finally he burrowed into a strawstack. When the storm abated two days later he crawled out and made his way to a farmhouse where it was found that his limbs were badly frozen.

Dr. Farnsworth of Canby and Dr. Andrews of Marshall found it necessary to amputate both legs of the boy above the knees, the left arm at the wrist, and nearly all the fingers of the right hand. The boy made a remarkable recovery. The story of his triumph over his handicap is too well known to need repeating; with county aid he completed his elementary education, worked his way unassisted (except for the first two terms) at Carleton College and became successively a teacher, editor, banker, and member of the State Legislature. The school for crippled children bears his name, the Michael J. Dowling school.

The snow that fell in October, 1880, was the first of many great snowfalls of that winter. Farms were isolated for months at a time; railroad lines into the county were blocked for six weeks; food and fuel ran low. Many a farm family subsisted on grain ground in the kitchen coffee mill. Even the newspapers suffered; they ran out of paper, and so printed issues on wallpaper or even "tea paper." The townspeople of Canby were given permission to dig up the railroad fence for fuel in the emergency.

When the snows melted in the spring there were floods as all the rivers rose to unprecedented heights. The townsite of Minnesota Falls was entirely inundated, and many of its buildings were swept away or wrecked. Millrace and dam were destroyed, and all hopes for a permanent settlement at that place were abandoned.

In the summer of 1881 another kind of disaster struck Granite Falls when an epidemic of smallpox swept the town. The disease was prevalent in the state in that year, and it was brought to Granite Falls by a woman who became ill on the train and stopped off at Granite Falls. She was guided by Harmon A. Baxter, a local man, to the Saint Paul Hotel, a hostelry which then stood on Baldwin Avenue in East Granite Falls. The stranger's illness turned out to be smallpox. The disease spread rapidly through the hotel and through the town. Mr. Baxter and members of his family were stricken and died of it. The city authorities hastened to provide a pest house, choosing for the purpose an old log house which had been vacant in East Granite Falls for several years. This house was moved upon the hill overlooking the town; then the question arose as to who would take charge of it. There was but one volunteer for this job—a big, black-bearded veteran of the Civil War by the name of Berg who was a sort of town roustabout. He offered to take charge of the pest house and its patients at no cost to the city, provided the authorities would furnish him with a quart of whiskey a day. So the fifteen patients at the Saint Paul House were moved up to the pest house with that understanding. Whatever may be said as to the efficacy of whiskey in the treatment of smallpox, Berg at least was successful with it, for all but one of his patients came safely through to recovery.

Although the death register shows only three deaths from this epidemic, there were many others, particularly in East Granite Falls, which may have been recorded in Chippewa county. Mr. Fred Gillingham who lived in that part of town at the time remembers how the wagon went about the streets at night, like the tumbrils of old, gathering up the dead; and how as they heard its noisy passage the people would waken and say, "someone else is dead of the smallpox." Burials were made without ceremony outside the cemetery fence. The ten graves that remain, forgotten and untended, are mute reminders of that dreadful summer.

In 1881, Dr. Farnsworth was appointed county physician for the west end of the county, beginning the system of dividing the county into medical districts. The Commissioners also tried to shift some of the burden of caring for the poor upon the shoulders of the county physicians, ruling that it should be their duty to find suitable boarding places for the county sick and disabled, at the same time to "use his best endeavors to save the county expense." As one of these "disabled," Michael J. Dowling was shifted from home to home. The commissioners were men who took seriously their responsibility as guardians of the public purse and disbursers of its largesse. They tried to get value for every dollar spent. When Michael J. Dowling was ready for artificial limbs the commissioners agreed to pay $100 toward the purchase of two legs, the rest to be raised by private subscription. In this they relented somewhat, however, finally agreeing to pay an amount sufficient to get two artificial legs and one arm, after which Dowling was to "paint the Court House fence." When some years later Dowling again appeared before the Board to ask help in getting new legs the Board agreed at once, his case "being so well presented."

In these years Dr. Stratton was taking an active part in civic affairs. He had been a member of the first town council of Granite Falls, and then president of the council, and in 1881, he was County Physician.

In 1883, Dr. Alexander C. Dockstader came to Granite Falls and opened his office "over the bank" (Granite Falls Bank). His professional card specified office hours from 8 to 9 a.m., and from 1 to 4 p.m., and he lived in the house which is now 120 Ninth Avenue, known as the Foster house. He was an ardent baseball fan, fond of hunting, and both he and Mrs. Dockstader were musical, which made them distinctly an asset to the community.

In the same year Dr. Henry Townsend died of a heart attack and Dr. Farnsworth died of "inflammation of the bowels" at the age of twenty-seven years.

As long as railroad lines were under construction the settlements in the county were deluged with laborers in search of recreation. In spite of the ruling of the County Board that business places and saloons should close at midnights and on Sundays, many saloons simply darkened the front windows and continued in business. This was true both in Granite Falls and Canby, where noisy revelry and street fighting went on through the night, and it was considered unsafe for any citizen to be on the street after dark. After the departure of this transient population the towns became more law-abiding, although the local papers frequently commented on the "disgraceful conduct" of named citizens. Canby went through a period of being a "wide open town" where such desperadoes as "Black Jack" and "Texas Jack" and his gang sought refuge from the authorities on their trail.

Where the Granite Falls press inveighed against the evils of strong drink the *Canby News* carried on another kind of campaign. It decried the indiscriminate purchase and sale of dairy (home made) butter in the local market and throughout the state.

The farm wife who made more butter than the family could use would bring in her surplus, along with her basket of eggs, to market. If the butter tasted all right it was considered good butter, and both merchant and customers were glad to get it. Little thought was given by most people to the conditions under which the butter was made or how it was made. Milk was brought from the barns and placed in shallow milk pans to cool. When the cream had risen to the top it was skimmed off and set aside until enough cream had accumulated, and it was then churned into butter. Undoubtedly some of the best butter ever made was produced in this manner, but it was not one which insured the purchaser a quality product in every instance. Probably the story told by the *Canby News* of the woman who brought her butter to market wrapped in her head shawl was pure fabrication, but it could have been true.

It was also the custom for the merchant to turn over butter which was unfit for sale to an agent for a renovating company. He bought it and shipped it out for renovation.

In 1885 the Legislature passed an act prohibiting the sale of "unhealthy or adulterated dairy products," but this act was designed to cope primarily with the threat to the dairy industry posed by the many small oleomargarine manufacturing plants that had sprung up in the state. Without regulation these were a health hazard, and as a result of the enforcement of this law the manufacture and consumption of oleomargarine in the state fell off to a fraction of what it had been.

The *Canby News* also demanded meat inspection. Certainly the demand for beef in the local market must have fallen off when the *News* commented that beef ought to be plentiful and cheap since many cattle were dying of diseases in the south. The *News* repeatedly demanded the appointment of a meat inspector "as required by the meat inspection act."

Farmers could be sure of meat of good quality for animals were slaughtered in the fall and the meat preserved in various ways. It could be hung and frozen, if the weather permitted. Beef was dried or corned, pork "put down" in brine or cured for hams and bacon, made into sausage, head cheese, and other variety meats. The refrigeration offered by the oat bin was not to be overlooked, for meat products such as sausage would keep safely when buried under bushels of cold oats or wheat.

Nearly every village had a slaughter house and a butcher who could be relied upon to keep the townspeople supplied with meat, but here again quality depended upon the experience, reliability and skill of the butcher. The importance of care in the handling of meats was impressed on the residents of the western part of the county when twenty-four men of Minneota were stricken with trichinosis. Doctors and druggists were called from Canby to help out in the emergency. Dr. Billington's investigation revealed that the stricken men had repaired to the butcher shop to feast on ham after a pleasant evening spent in the tavern across the street.

The local press also devoted much space to the evils of the liquor habit. Liquor licenses were issued by the County Board beginning with 1876, when the license fee was fixed at $10. Liquor seems to have been handled much as any other merchandise, simply sold across the counter in both drug and general stores, for at its meeting on December 10, 1876, the Board rulled that "O. G. Veldey, William Stratton, and K. E. Neste" be notified to take out licenses for "retailing liquor" or "suffer the penalty." Even the smallest village boasted several saloons.

In the winter months when each village was in a measure isolated from the others, and from the outside world, entertainment depended upon the activity and ingenuity of its clubs and societies. There were debating societies, musical clubs, social clubs, and forums for the discussion or study of particular subjects in almost every settlement. The *Granite Falls Tribune* of October 5, 1886, mentions the Oxford League, the Scandinavian Debating Club, the Chautauqua Reading Circle, the Shakespeare Club, and the Young Men's Club, all committed to raising funds for a public reading room. Canby had a literary society which met every week, year after year, and presented programs of music, declamations, and debates. Hanley Falls had both a Literary Society and a Dancing Club, while Clarkfield had musical organizations and other activities.

Doctors and their wives were naturally prominent and in much demand at social affairs and in organizations of all kinds. Many of them had special talents. Dr. and Mrs. Dockstader were often the soloists of the musical club programs. Mrs. Cressy and Mrs. Fuller were active members of the Hesperian Club which studied Shakespeare's plays, and acted out parts of them for the public, although there were only eight members, all women. Dr. Chambers was often soloist on the Canby Literary Society programs and Mrs. Chambers obliged by giving readings or "declamations." It was a leisurely time; the small settlements offered little in the way of diversion and labor of every kind was cheap and plentiful. Nearly every household could have a maid who worked long hours for small wages. Lacking amusement, the people learned to amuse themselves. They read books, they played band instruments, they took part in whatever entertainment the community afforded, either as participants or spectators. It was not unusual to hire a hall for a social function and secure the services of the local band or orchestra for the entertainment of guests. For the men especially, there were billiards, and during the coldest months there were chess games going in nearly every public place.

From the earliest years great interest was shown in providing schools. The children of the first settlers in Granite Falls attended school in a log house about a mile west of the village; a building also used for church on Sundays. The first term of school in the city itself was taught in 1873 in East Granite Falls where a school house was built at a cost of $1500. In 1879 a new school district No. 21

was organized to include the part of Granite Falls which lay in Yellow Medicine County, and Dr. Stratton was a member of the first board of education which chose the site and built the first school building on the present school grounds. The first school building was ready for use in January 1880, and in 1889, an addition was built for a high school.

Similarly, the first school in Canby was a one-room school taught by Andrew Ouverson in 1877. The next school building was a frame store building at the corner of St. Olaf and Second Streets. In 1880 a two-room, two-story building was erected which was used until about 1895 when a large new school house costing $15,000 was erected.

One-room schoolhouses dotted the prairie as the population increased and moved westward. The school was the center of community life in the country, a convenient voting place, a meeting place for the town board, and a speakers' forum. The school teacher "boarded around" when tax moneys were insufficient for all school expenses, or lived at the most convenient home. The teacher was an important personage in the community.

The first public library in the county was founded in 1877 when the Granite Falls Library Association organized to provide a free reading room and circulating library. A few books were purchased and placed in one of the stores. It was moved around from place to place until finally room was found for it in the city hall.

Churches were organized in the county at an early date, beginning with the Methodist which in 1871 used the old log school house, or Mr. Fitch's bar room, for its meetings. Next in the field were the Congregationalists who built the first church building in the county; in 1876 the Norwegian Evangelical Lutheran, then the Baptist in 1881. Services for Catholics were held in homes from 1872 on. In Canby the first church was the Lutheran St. Stephan's, in 1876, followed by the Presbyterian in 1882, St. Paul's Lutheran in 1879, the Methodist Episcopal in 1886, and the Catholic in 1896.

In 1884 the Minneapolis and St. Louis Railroad entered the county at its southeastern corner, and platted as it progressed westward the townsites of Echo, Wood Lake, Hanley, Hazel Run and Clarkfield. In the western part of the county the Northwestern Railroad platted Porter and Burr, and a branch of the Great Northern came from the south to pass through Hanley and Granite Falls. Elevators for storage of wheat began to appear on the railroad right of ways, and through them passed the huge wheat crops grown in the county. Although other crops were raised, wheat was the cash crop on which the farmer depended year after year. The new railroad lines meant shorter trips to market for the farmer and added to the general prosperity.

The first of the new settlements on the Minneapolis and St. Louis to be chosen for a field of medical practice was Hanley, later called Hanley Falls. To this tiny village of less than a hundred souls came Dr. Albert B. Sweet in 1885. Dr. Sweet had been a pharmacist in Marshall and had not completed his medical training when he came to Hanley to open the first drug store there. A cousin, F. H. Sweet, assisted him in the drug business while he continued his work at the University and graduated in 1885. Dr. Sweet practiced in Hanley until 1891.

(To be continued in the August issue)

President's Letter

SUPPORT EQUALS IMPROVEMENT

The very core of medical education today is the economic structure of the individual medical school. Granted that considerable dependence is placed on the calibre of administrators, department heads and instructors, but without the proper financial support, medical education is to be found wanting.

Throughout the nation today, medical schools have found themselves in a financial dilemma; rising costs for construction and instruction, coupled with the skyrocketing demand to turn out more doctors, has forced many educational institutions to operate on limited budgets, and, as a consequence, seriously threatened the high standards of medical education previously developed.

Federal aid to medical education has been proposed as a partial solution to this problem.

But the medical profession foresaw the real danger of too much federal control entering into such a program, and sought to do something constructive to aid medical education. Thus, the American Medical Education Foundation was created, with the express purpose of collecting funds to be specificially used to aid medical schools. The American Medical Association, since the fund's inception, has contributed heavily as an organization to this worthy foundation.

In spite of this generous giving, the funds for medical education have not piled up as quickly as the need has developed. Only 11,000 individual doctors have contributed to the American Medical Education Foundation since the first of the year, and the aggregate funds amount to something over one million dollars.

This amount, divided among the nation's seventy-nine medical schools, obviously cannot begin to meet the need, in the light of the cost-of-living factors quoted above.

It must be evident to every physican that an individual effort is urgently needed. At the present time, doctors of Minnesota are being asked to consider this matter seriously. Letters have been sent to individual Association members asking for their immediate financial assistance. You, as one of those who has benefited from the high standards of medical education, have an obligation to lend your firm support to insure even higher standards for future practitioners.

We have a great challenge in this matter; it is squarely up to the medical profession itself to invest in improved medical education through active support of our medical schools.

Conrad J Campbell

President, Minnesota State Medical Association

Editorial

CARL B. DRAKE, M.D., *Editor;* GEORGE EARL, M.D., HENRY L. ULRICH, M.D., *Associate Editors*

THE INCREASING PERCENTAGE OF BACTERIAL-RESISTANT STRAINS TO ANTIBIOTICS

THE PRESENCE of Sir Alexander Fleming at the Centenary meeting of St. Joseph's Hospital in St. Paul, May 16 and 17, added further publicity to penicillin, of which he was the discoverer. His recognition of the significance of the effect of a chance contamination of a culture of staphylococci by a mold led eventually to the development first of penicillin and then the ever mounting list of other antibiotics. The therapeutic value of the antibiotics is incalculable and too much honor cannot be heaped upon the individual who had the intelligence and imagination necessary to develop the first antibiotic.

As is the case with many new products, several years of hard work were needed before penicillin became available for clinical use. Dr. Fleming's first observation and isolation of a pure culture of the fungus, *Penicillium notatum,* was accomplished in September, 1928. His first article on the subject appeared in the *British Journal of Experimental Pathology* in 1929. Cultures of *Penicillium notatum* were distributed to many workers in other countries but it took ten years before Florey and his associates at Oxford effected the concentration and purification of the active principle of the fungus, named, by Dr. Fleming, penicillin. This original culture of the fungus was the source of all penicillin until as late as 1943.

The remarkable therapeutic value of penicillin stimulated the search on the part of a number of commercial houses for other antibiotics which might be better than penicillin and might be effective against other bacteria. The success in the development of other antibiotics has been remarkable but it is interesting to note that the original antibiotic, penicillin, has proven the least toxic of them all, the cheapest, and the only antibiotic not patented.

It is strange that the first demonstration of the properties of the antibiotics as well as the sulfas was in connection with the staphylococcus. The first clinical demonstration of the value of a sulfa (prontosil) was in the case of a ten-month-old infant desperately sick from staphylococcus septecemia in which recovery resulted. The case was reported in 1933 in Germany by Foerster. Likewise the first observation of the effect of the mould—*Penicillium notatum*—on bacterial growth was on a culture of staphylococci. The early enthusiasm over the efficacy of both drugs in the treatment of staphylococcic infections had to be modified in view of later experience.

The sulfas did not prove to be the answer for the treatment of staphylococcic septicemia. In the pre-antibiotic period the mortality from this disease was over 80 per cent—according to one report.[1] With the advent of penicillin the mortality from staphylococcic septicemia in one series of twenty-eight patients reported at the University of Minnesota hospitals was only 28 per cent.

Since this period the strange phenomenon of the increase in the percentage of antibiotic-resistant strains of bacteria has been reported at various localities.[1] By 1948-49 it was found at the University of Minnesota hospitals that the number of penicillin-resistant strains of staphylococci were on the increase. Whereas the number of failures due to infection with penicillin-resistant staphylococci were at first rather insignificant, by 1950 over 50 per cent of some 104 strains of staphylococci were found to be resistant. Very few of the strains tested were found to be resistant to the other antibiotics such as Aureomycin, Terramycin and Chloramphenicol. Thus these antibiotics could be used for infections due to penicillin-resistant staphylococci. In 1952 another group of 100 strains of staphylococci were tested *in vitro* and 60 per cent were found to be penicillin resistant and a similar percentage resistant to streptomycin. In this same series it was rather startling to discover that 40 per cent of the strains were resistant to Aureomycin and Terramycin. Fewer strains were found to be resistant to Chloramphenicol and none to Bacitracin, Erythromycin and Carbomycin. Similar experience has been reported from the Mayo Clinic, the Boston City Hospital and from Sydney, Australia.

---

[1] Wise, Robert I., and Spink, Wesley W.: The Management of Staphylococcic disease. Bull. U. of Minn. Hosp. and Minn. Med. Found., 24:640 (June 12) 1953.

Just as the percentage of strains of staphylococci resistant to penicillin has been increasing since the use of the drug has become widespread, a similar increase in the percentage of strains resistant to other antibiotics has been taking place.

Strains of tubercle bacilli have been found resistant to streptomycin for a number of years. Some strains have been found resistant and others sensitive to streptomycin in the same patient and even in the same sputum specimen and the administration of PAS has been found to cause a strain of tubercle bacillus to become more sensitive to streptomycin.

There is evidence that there is a similar though less marked increase in the percentage of other bacteria resistant to the antibiotics.

The opinion as to the reason for this increase in percentage of strains sensitive to the antibiotics may not be unanimous but it seems reasonable to believe that the antibiotics destroy the sensitive strains and allow the resistant ones to cause morbidity. This seems more reasonable than that individual strains of bacteria actually develop resistance to the antibiotics. One recent survey[1] has shown that 54.5 per cent of hospital personnel were nasal carriers of Staphylococcus pyogenes, 80 per cent of the strains being penicillin-resistant. Cross infection with resistant strains can present treacherous problems for the hospitals.

In spite of the accomplishments of the wonder drugs—the antibiotics—which have been outstanding, the percentage of cures produced in a variety of infections seems to be diminishing. In a recent report[1] of twenty-two patients with staphylococcic sepsis, 54 per cent died and the outlook for three additional patients was poor. This was the result following the use of a number of different antibiotics and approximated the mortality in pre-antibiotic days.

Penicillin and also other antibiotics have been prescribed for a great variety of infections and doubtless for a large number for which they were not indicated. If our conception of antibiotic-resistance is correct, however, we fail to see how this use, though extravagant, can have proved detrimental to the human race.

"WATCH IT, DOC"

OUR ATTENTION has been called to an editorial which appeared in the June 22 number of *Life,* entitled "Watch It, Doc." The editorial is insulting to the profession, particularly to our AMA House of Delegates and the Medical Society of the County of New York. While the editorial is involved, it seems advisable that editorial comment be made to clarify the subject.

Admitting the wonderful advances in medical science announced at the AMA meeting held in New York in June, the editorial goes on to criticize the House of Delegates for seeming "to be against almost anything that threatens the profit of a doctor's private practice." As proof of this uncomplimentary criticism is cited the resolution passed by the House of Delegates branding the Federal regulation that provides free diagnostic services for crippled children as socialistic. That is all the evidence presented to back up the unkind criticism of the House of Delegates. The editor says the "public has become utterly weary and cynical from hearing the AMA snarl 'socialistic' at everything it doesn't completely approve of," and that the doctors do not know the difference between the terms "socialistic" and "social."

As a matter of fact, the terms "socialistic" and "social" have a variety of meanings in use and as defined in Webster's unabridged dictionary. However, when the term "socialistic" is used, it generally refers to collective or governmental ownership as developed by Karl Marx and as opposed to private ownership and management. The word "social" is used not only with the meaning of sociable but as pertaining to the welfare of human society, expecially of the lower-than-average income group, in such phrases as social service, social disease, et cetera. There should not be much room for difference of opinion as to where the line should be drawn between social services for the indigent and frankly socialistic governmental activities. It would seem that the ability of private industry to care for any need of the public should be the criterion as to whether socialistic governmental activity is necessary. Governmental activities which compete with private industry can be branded socialistic, and we have plenty of examples in our country today.

Now, the medical profession has shown itself conscious of the difference between the terms "socialistic" and "social," as ordinarily used. It has been conscious of the need of governmental assistance in meeting certain medical needs of the low income group and has contributed its services, gratis, in many such fields. It has approved the support by city, county, and state of charity hospitals, sanatoria for the tuberculous and mentally ill and even hospitals for crippled children unable to afford private medical care. The treatment of a crippled child is likely to be so prolonged as to be beyond the financial ability of most citizens to meet. Governmental assistance along these lines may be termed social in contrast to socialistic.

Crippled children appeal particularly to the sympathy of all. They appealed to the sympathy of Dr. Arthur Gillette and impelled him to induce the legislature to establish in Saint Paul a state-supported hospital for crippled children which was subsequently called the Gillette Hospital. The medical profession has given generously of its services gratis or for a nominal fee to its inmates for the past forty years or more. In addition, the Shriners have established and supported several hospitals throughout the country—one in Minneapolis—for the free care of crippled children.

For a number of years, federal funds have been appropriated for the diagnosis of the disabilities of crippled children throughout the states. An important point as regards the appropriation is that bureaucratic regulations from the Children's Bureau require that no means test be used in the selection of beneficiaries and that a state which does not submit to these regulations can have no federal funds allocated. No difficulties have been encountered in the administration of this federal activity in Minnesota because of a local provision that children must be recommended by their private physicians for examination and diagnosis. Thus, there is no infringement on private practice in Minnesota. Provision of this federal supported activity, however, irrespective of ability to pay, places it in the socialistic category, the *Life* editors to the contrary notwithstanding.

We are constrained to mention at this point that the care of veterans' non-service-connected disabilities by the Veterans Administration is another example of socialism. The AMA House of Delegates, meeting in New York, took a stand in opposition to government care for non-service-connected disabilities, except in the case of the tuberculous and mentally ill. This was a realistic attitude for such care in most instances is not in competition with private practice. The veteran holds a soft spot in the heart of his fellow citizens and many believe that nothing is too good for him—even medical and dental care the rest of his life. With a large fraction of the male population included in the veterans group, government medical care for all disabilities of veterans would eventually disrupt private medical practice.

The *Life* editorial takes the Medical Society of the County of New York to task for its public relations in respect to its attitude toward the proposal by Herman J. Stichman, the State Commissioner of Housing in New York, to provide clinical facilities to Mt. Sinai Hospital in New York City in return for free medical care to certain tenants. The editorial goes on to state:

> "This spring, *New York Medicine,* official publication of the society, declared that the plan would 'closely resemble socialized medicine if it is put into effect.' The Chairman of its Committee on Medical Economics, a Park Avenue obstetrician, in declaring Stichman's plan 'Utopian,' added for publication in the *New York Times*: 'He said the doctors at the Clinic would make house calls. . . . I suppose he'd like to serve them breakfast in bed, too! By 'them,' the chairman meant the patients who might be too ill to be moved. His little joke must surely be one of the greatest of its type since Marie Antoinette said, 'Let them eat cake.' "

This uncomplimentary picture of the medical profession in New York, spread throughout the country in an editorial in *Life,* we now learn was based on a falsehood. What are the facts?

In brief, Herman J. Stichman, the State Commissioner of Housing, published in the *New York Medicine* of April 5 his proposal to provide space for a clinic in connection with the building of a huge low-cost dwelling project in New York City, known as Carver Houses, in exchange for free medical service to be provided by Mt. Sinai Hospital. Following the article was a critical analysis which concluded that the occupants of such dwellings were not indigents, that the best way to provide medical care for them would be through medical insurance available for the low income group and from private practitioners, any indigents in the dwellings to avail themselves of free medical clinics already in existence and available; that such a plan would constitute encroachment by a hospital on private practice and the use of tax funds for the benefit of private

(Continued on Page 766)

The Dean's Page

THE MEDICAL SCHOOL

Its Objectives and Organization

The Medical School of the University of Minnesota was established and is supported by the people of the state in order that they may have adequate and competent medical services. Initially this involved only the education of general physicians. This is still the primary objective of the Medical School. However, the complexities of modern medical care and the rapid advances in medical science have forced the Medical School to accept other responsibilities. Prominent among these are the provision of graduate medical education for the training of specialists, continuation education for the benefit of physicians in practice, the conduct of medical research, the provision of specialized medical services to the patients of the University Hospitals and the training of auxiliary medical personnel such as nurses, medical technologists, x-ray technologists, physical therapists, occupational therapists, medical and psychiatric social workers, hospital dietitians, clinical psychologists, hospital administrators, and various categories of professional public health workers.

The Medical School was organized approximately sixty-five years ago with twenty-nine faculty members, all of whom earned their livelihood by private practice. Today the faculty consists of 171 full-time members and 459 part-time members of the rank of instructor and above. Full-time faculty members have predominated in basic science departments for many years. In the clinical departments, on the other hand, full-time teachers are a relatively recent development, initiated in this country approximately forty years ago by Johns Hopkins University. Today a few medical schools have their entire faculties, in clinical as well as basic science departments, on a full-time basis. Others depend for clinical teaching upon part-time practicing physicians. Still others, such as the University of Minnesota, have a nucleus of full-time staff members in the clinical departments but utilize in addition the services of many practicing physicians.

It is the intent of the University of Minnesota to continue upon this basis, believing that to conduct an adequate educational program a medical school needs some staff members in all departments who devote themselves exclusively to medical teaching and research, but that clinicians, who are meeting the day-to-day problems of the private practice of medicine, have a very real and important contribution to make to the teaching of medical students.

The location of the University of Minnesota Medical School on the campus with the rest of the University and in a large metropolitan center, is indeed a fortunate one. In this situation the Medical School benefits from the atmosphere and associations of a university campus and still has available the wealth and diversity of clinical material and the services of a splendid part-time staff that are available only in a large metropolitan center.

For purposes of administration, the Medical School is divided into the following departments: Anatomy, Bacteriology, Physiology, Physiological Chemistry, Pharmacology, Pathology, Medicine, Surgery, Obstetrics and Gynecology, Pediatrics, Ophthalmology and Otolaryngology, Psychiatry and Neurology, Radiology, Physical Medicine and Rehabilitation, and Continuation Medical Education.

Closely affiliated with the Medical School, as divisions of the College of Medical Sciences, are the following instructional units. School of Public Health, School of nursing, Course in Medical Technology, Course in Physical Therapy, Course in Occupational Therapy, and Course in X-Ray Technology.

In this series of articles, we will attempt to give brief pictures of the organization and activities of most of these departments of the Medical School and divisions of the College of Medical Sciences.

Harold S. Diehl
Dean of Medical Sciences

Medical Economics

Edited by the Committee on Medical Economics
of the
Minnesota State Medical Association
George Earl, M.D., Chairman

AMA DELEGATES MEET, DISCUSS, DEBATE PLAN

The 102nd Annual Session of the House of Delegates of the American Medical Association convened at the Waldorf-Astoria in New York City on June 1. Comparatively speaking, discussions were mild, with action seemingly watered down somewhat in view of what was expected to be fire works.

However, after thoroughly studying some of the measures adopted, it can be seen that the House took positive steps in decisions on many matters under consideration.

A certain amount of clarification came out of the discussion on treatment of non-service-connected disabilities by the Veterans' Administration. The House gave unanimous approval to a recommendation from its Reference Committee on Insurance and Medical Service, which recommendation was submitted as a substitute for eight different resolutions concerning this matter.

In approving this recommendation, the House actually re-adopted a resolution originally presented at the Denver, 1952, Interim Session:

> "Your Committee recommends with respect to the provision of medical care and hospitalization benefits for veterans in Veterans Administration and other federal hospitals that new legislation be enacted limiting such care to the following two categories:
>
> "(a) Veterans with peacetime or wartime service whose disabilities or diseases are service-incurred or aggravated, and
>
> "(b) Within the limits of existing facilities to veterans with wartime service suffering from tuberculosis or psychiatric or neurological disorders of non-service-connected origin, who are unable to defray the expenses of necessary hospitalization.
>
> "Your Committee recommends that the provision of medical care and hospitalization in Veterans Administration hospitals for the remaining groups of veterans with non-service-connected disabilities be discontinued and that the responsibility for the care of such veterans revert to the individual and the community, where it rightfully belongs."

Service-Connected Plan Okay

The reference committee report further stated that it was in full accord with the present program of medical treatment for veterans with service-connected disabilities:

> "It is the belief of your committee that the medical profession must concern itself, not with the numbers of 'chiselers' in Veterans Administration hospitals nor with the efficacy of the Veterans Administration in the administration of enabling legislation, but rather with the broad question of whether such legislation is sound, whether the federal government should continue to engage in a gigantic medical care program in competition with private medical institutions and whether the ever-increasing cost of such a program is a proper burden to impose on the taxpayers of the country. A consideration of this problem must, of course, be predicated upon a concern for the health of the entire population and not just a particular segment."

Emphasize Ethics

Considering the eleven resolutions dealing with publicity on statements by official spokesmen of allied medical organizations, the House recommended no action, but firmly emphasized the supremacy of the American Medical Association's code of ethics to govern the entire profession. The reference committee's recommendation read as follows:

> "The Principles of Medical Ethics as formulated, interpreted and applied by the American Medical Association must be considered the only fundamental and controlling application of ethics for the entire profession. Any statement relating to ethical matters by other organizations within the general profession of medicine, advances views of only a particular group and is without official sanction of the entire profession as represented by the American Medical Association."

The report also condemned generalized statements regarding ethics of physicians:

> "Your reference committee believes that the harm done to the public and to the profession by the current articles which lower the confidence patients have in their doctors cannot be objectively evaluated. This highlights the

fact that, when individuals or groups without official status in the American Medical Association utter or publish ill-considered statements, the result too often is that the confidence of the public in the medical profession is placed in jeopardy."

While the committee reaffirmed its agreement with the right of free speech, it amplified its explanation of its action by stating,

> "Broad generalizations, ill-advised and poorly prepared statements that often fail to convey the intended meaning, are most unfortunate and are to be deplored."

Critical comments which are destructive can serve no useful purpose, the report declared

> "Your committee has the utmost confidence that the great majority of our members are entirely capable of avoiding these pitfalls without additional advice from this committee."

Osteopathy Discussed

One of the most controversial and prolonged discussions of the House session was action on the question of osteopathy. The final decision, after considerable heated and vigorous debate, was to postpone action until the annual meeting of 1954, thereby providing for further study by delegates and the individual state associations.

However, certain proposed principles were outlined for consideration with regard to the field of osteopathy and its relationship to the medical profession. Four points were presented by last year's Committee for the Study of Relations Between Osteopathy and Medicine, but these were not adopted by the House of Delegates:

1. That the House of Delegates declare that so little of the original concept of osteopathy remains that it does not classify medicine as currently taught in schools of osteopathy as the teaching of "cultist" healing.

2. That the House of Delegates state that pursuant to the objectives and responsibilities of the American Medical Association, which are to improve the health and medical care of the American people, it is the policy of the Association to encourage improvement in the undergraduate and postgraduate education of doctors of osteopathy.

3. That the House of Delegates declare that the relationship of doctors of medicine to doctors of osteopathy is a matter for determination by the state medical associations of the several states and that the state associations be requested to accept this responsibility.

4. That the Committee for the Study of Relations Between Osteopathy and Medicine or a similar committee be established as a continuing body.

The majority report of the reference committee felt that the committee's report was dealing with too controversial a subject to allow action without further study. It therefore recommended, and the House concurred, that the Committee be continued, that action be deferred until June, 1954, and that the House be prepared to answer then, the following questions:

1. Should modern osteopathy be classified as "cultist" healing?

2. Since the objectives of the American Medical Association include improvement in undergraduate and postgraduate education, should doctors of medicine teach in osteopathic schools?

3. Should the relationship of doctors of medicine to doctors of osteopathy be a matter for determination by the several state associations?

Next year's House of Delegates session in San Francisco will see decisive action on this important policy matter.

MORE SAVINGS, SPENDING REFLECT LIVING STANDARD RISE

Although most of the nation's substance has gone to defense programs for the past decade,

> "the United States has given a practical demonstration of the dynamic effect of rising productivity in the way it has continued to lift the living standards of the man in the street."

This statement prefaces a recent report on the higher living standards in America, reported by the Insurance Economics Society of America in its publication, "Insurance Economics Surveys."

A rise in both incomes and savings are the main factors in the over-all rise in living standard. The report states:

> "Over recent years, as the figures show, more Americans than ever before have enjoyed rising incomes, spent more for needs and wants, and saved more in life insurance and in other mediums of thrift."

Income increases are reported:

> "Total personal income has increased in every year except one out of the last thirteen. The exception was in the brief recession of 1949, but even then the decline

was small. The 1952 total of personal income amounted to more than $268 billions, as against less than $73 billions in 1939, an increase of nearly fourfold."

Consumer spending has also shown an increase of considerable proportions:

> "Consumer spending has increased in every year since 1939. There have, of course, been variations from year to year, reflecting such factors as the scarcity or abundance of goods, and the impact of changing domestic and international conditions on public psychology and individual buying impulses. Over all, however, the upward trend in personal spending has been uninterrupted from 1939 to date. Goods and services bought by the people in 1952, exceeded $216 billions, more than triple the pre-World War II figure."

The trend in personal savings has also climbed steadily, not only in amount, but in distribution. The report states that although savings have pursued a more zigzag course than either total income or consumer spending, they reached abnormally high levels during the last war, fell off for a few years thereafter as goods came into supply, and then moved steadily upward in the last five years.

> "Last year's total of personal savings, as compiled by the Department of Commerce aggregated $18 billions, some six and one-half times the 1939 savings figure."

Distribution Rises, Too

There are 24 million more owners of life insurance today than there were at the beginning of the last war, the report states. The total of insurance in force is about two and one-half times as great.

Unemployment Decreases, Taxes Increase

Also, the trend toward higher living standards has entered the employment field. More than 9.5 million persons, which is over a sixth of the American working people, were jobless in 1939. The report states that this nation has had, by contrast, full employment in recent years.

The biggest gain of all has been found in the tax field. Here, personal taxes in 1952 totaled a record high of $34 billions, half as high again as the World War II peak and fourteen times greater than the 1939 total.

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

230 Lowry Medical Arts Building
Saint Paul 2, Minnesota

Julian F. DuBois, M.D., Secretary

BELGRADE, MINNESOTA, PHYSICIAN SENTENCED FOR GRAND LARCENY

Re. State of Minnesota vs. George F. Engstrom

On May 4, 1953, George F. Engstrom, M.D., fifty years of age, was sentenced by the Hon. Arthur A. Stewart, Judge of the District Court of Ramsey County, to a term of one year in the Ramsey County Jail. The Court stayed the execution of the sentence for a period of one year upon the defendant's good behavior. Dr. Engstrom had entered a plea of guilty on July 14, 1952, to an information charging him with the crime of grand larceny in the second degree. At that time the Court continued the matter to October 10, 1952, and then to May 4, 1953. The purpose of the continuance was to give Dr. Engstrom an opportunity to make restitution for money that he had wrongfully obtained from various insurance companies and others as the result of fictitious, fraudulent and excessive claims for remuneration for professional services.

At the time Dr. Engstrom appeared in Court to be sentenced, the Court was advised that Dr. Engstrom had made full and complete restitution and that his license to practice medicine had been suspended by the Minnesota State Board of Medical Examiners on February 14, 1953, for a period of three years. Judge Stewart stated that, in the Court's opinion, Dr. Engstrom was being sufficiently punished for his wrongdoing, particularly by being deprived of his license to practice medicine.

MINNEAPOLIS PHYSICIAN AND ACCOMPLICE SENTENCED FOR CRIMINAL ABORTION

Re. State of Minnesota vs. George F. Schmidt and Maryllyn M. Dinsmore.

On May 29, 1953, George F. Schmidt, M.D., seventy-two years of age, was sentenced by the Hon. William C. Larson, Judge of the District Court of Hennepin County, to a term of not to exceed four years in the State Prison at Stillwater for the crime of abortion. The Court ordered the sentence stayed and placed the defendant on probation for a period of three years. Dr. Schmidt at the time of his arrest on April 21, 1953, maintained an office for the practice of medicine at 2707 Nicollet Avenue, Minneapolis. Dr. Schmidt was also a deputy coroner of Hennepin County. On April 28, 1953, Dr. Schmidt entered a plea of guilty to an information charging him with the crime of abortion and stated to the Court that he received $50.00 for doing an abortion on a twenty-one-year-old married Minneapolis woman. Dr. Schmidt admitted that he had performed "about a dozen abortions" prior to the one that resulted in his arrest.

On May 28, 1953, Mrs. Maryllyn M. Dinsmore was sentenced by Judge Larson to a term of not to exceed three years in the Women's Reformatory at Shakopee for the crime of abortion. Mrs. Dinsmore was the "go-between" in arranging the abortion that was performed by Dr. Schmidt. Mrs. Dinsmore admitted that she received $250 for her services. Mrs. Dinsmore denied that she was involved in any other abortions except one

(Continued on Page 775)

Minneapolis Surgical Society

Meeting of December 4, 1952

The President, Hamlin Mattson, M.D., in the Chair

STRANGULATION OBSTRUCTION DUE TO INTERNAL HERNIA

Inaugural Thesis

B. D. MITCHELL, M.D.
Minneapolis, Minnesota

The two types of mechanical small bowel obstruction differ because in the simple occlusion only one portion of the lumen of the bowel is obstructed by an intrinsic or extrinsic lesion; in strangulation, two loops of bowel are blocked, as well as the corresponding vessels of the mesentery.

As a rule, strangulation obstruction requires much more active and prompt treatment by the surgeon. This is true because a simple occlusion usually progresses slowly and a localized nutritional disorder may develop at the obstruction site, whereas strangulation is more rapid and severe and the incarcerated loop may become necrotic.

Strangulation obstruction of the small bowel composes about 45 per cent of the total number of mechanical obstructions of this organ. By far the greatest percentage of these are caused by external herniae which are relatively easy to diagnose. Obstruction due to strangulation of small bowel in an internal hernia is rare. It is estimated that these comprise .5 to 1.2 per cent of all strangulating obstructions of the small bowel. The mortality attending these cases is high, a recent review stating that the overall mortality is as high as 50 per cent. This figure would undoubtedly be reduced if figures were available for those cases treated in the past ten years.

Report of Cases

Case 1.—A sixty-seven-year-old white woman was admitted to St. Mary's Hospital on May 22, 1952. Five days previous to this she had been seized with a sudden attack of abdominal pain and emesis. She was unable to keep any food or fluids down and she was admitted suffering mainly from dehydration. The pain had entirely disappeared within the first few hours after the onset of her symptoms. The dehydration was corrected by parenteral fluids and by the next day she was able to take food orally without vomiting.

Examination on admission was essentially negative except that there was slight tenderness in the left upper quadrant of the abdomen. There was also a suggestion of a fullness in this area; however, a definite mass could not be outlined.

Two days after admission an upper gastrointestinal x-ray revealed that the stomach was displaced to the right from extrinsic pressure on the greater curvature. The displacement appeared to be due to numerous small bowel loops which were quite markedly distended. Follow-up studies revealed delay in passage of the barium through the small bowel. A barium enema on May 26, was essentially normal except for the above-mentioned small bowel distention which appeared to be localized mostly on the left side of the abdomen. The barium given two days previously had completely passed through the bowel. On May 29, intravenous pyelograms were made and were normal.

On May 29, exploration, with a tentative diagnosis of small bowel malignancy, probably metastatic, was carried out through a right paramedian incision. About four feet of dilated small bowel was found to be projecting through a hole in the omentum which was about 10 cm. in diameter. The bowel wall and mesentery was edematous but otherwise normal. The portion of the omentum distal to the opening was resected and the abdomen closed. There were no other abnormalities within the abdomen. The patient was discharged from the hospital five days after operation and made an uneventful recovery.

Case 2.—An obese sixty-two-year-old white man was admitted to St. Mary's hospital on April 9, 1952. Eight hours previous to admission the patient was moving some heavy furniture in the office of the lumber yard where he was employed; he had a sudden sharp abdominal pain followed in a few minutes by vomiting. He was seen about two hours after onset by his doctor who gave him a hypodermic injection which partially relieved his distress for an hour or two. However, he became worse and was brought to the hospital. The patient had had no previous surgical procedure.

On admission to the hospital the positive findings were as follows: There was moderate distension of an obese abdomen, generalized tenderness of the entire abdomen, more marked just to the left of the umbilicus and voluntary muscle guarding over the entire abdomen with slight but definite rigidity of the midportion of the left rectus muscle. The bowel sounds were normal except for some occasional high pitched sounds.

The leukocyte count was 10,300 with 91 per cent neutrophils. Electrocardiogram and chest x-ray were normal. Serum amylase was 70 units. Flat plate and upright x-rays of the abdomen revealed numerous loops of dilated small bowel and fluid levels within the small bowel loops.

Laparotomy was begun eleven hours after the onset of symptoms. There was a moderate amount of serosanguineous fluid in the peritoneal cavity. A large indurated mass was palpated just to the left of the midline which was easily brought out of the incision and was found to be the edematous tissues involved in a herniation of the jejunum through an opening in the omentum; this opening was about 5 cm. in diameter. The bowel proximal to this was dilated and the distal bowel was collapsed. The herniated bowel was dark in color, dilated and edematous, but definitely viable. The opening was enlarged, the hernia reduced and the involved portion of omentum resected.

The postoperative course was uneventful and the patient was discharged on the sixth postoperative day. He has been well since. The case has been somewhat complicated by the fact that the patient is claiming industrial compensation for his care and temporary disability.

Case 3.—A twenty-six-year-old white man was admitted to the hospital at 7:00 p.m. on June 9, 1949. Twenty hours previously he had had a sudden attack of severe abdominal pain and shortly after this he vomited. He was seen at home four hours later at which time his abdomen was soft, his temperature was 98° F. with no chills or upper respiratory or urinary tract complaints. The pain had almost disappeared. The pain and vomiting recurred six hours later, shortly after which he began having loose yellow stools.

On admission the patient was vomiting blood and he was obviously a very sick man. I saw the man at this time and during the examination he vomited dark blood on numerous occasions. The abdomen was markedly distended but was peculiar in that the distention seemed to be confined to the upper abdomen. This distention seemed to cause the patient to have difficulty in breathing. There was extreme generalized tenderness and marked rigidity, almost a board-like abdomen; these findings were more marked in the upper abdomen. The temperature was 101° F. and the white blood count was 17,300 with 87 per cent neutrophils. X-ray of the abdomen in the upright position did not reveal any gas under the diaphragm. There had been no previous abdominal surgery.

A guarded preoperative diagnosis of bleeding perforated ulcer was made and a laparotomy was performed. A right upper paramedian incision was made. There was a moderate amount of serosanguineous fluid in the belly. The stomach and colon with the stretched gastrocolic ligament between them puffed out of the wound. Further exploration showed that the colon and transverse mesocolon were pushed downward and a dark colored material could be seen behind the mesocolon and the gastrohepatic ligament. Most of the visible small bowel was collapsed; however, about three feet of the proximal jejunum was enormously distended and the distal end of this loop coursed up into the region of the gallbladder over the hepatic flexure of the colon. It disappeared into the foramen of Winslow. The diagnosis was made, of course, but reduction was extremely difficult and was accomplished only after incising through the gastrocolic ligament and slowly manipulating the bowel on each side of the foramen of Winslow, about eight feet of jejunum being reduced out of the lesser omental cavity. The patient's good condition at this point in the procedure permitted further careful exploration. There was no congenital defect that could give a possible explanation as to etiology.

The abdomen was closed in layers. Gastric suction was discontinued the next day and the patient left the hospital on the tenth postoperative day. He has been well since.

Small bowel obstruction due to strangulation through a congenital defect in the omentum or mesentery, while rare, has frequently been reported in the literature. However, since 1834, when Blandin reported the first case of herniation through the foramen of Winslow, there have been sixty-five cases reported. Most of these cases involved the terminal ileum, and the ascending colon in the strangulation, suggesting a defect in the rotation of the bowel as a possible predisposing cause of the condition. Other factors suggesting possible etiology are: (1) an extremely long mesentery and (2) a large foramen of Winslow. The patient presented here had neither of these findings.

The first operation for this condition was in 1888. The first patient to live following operation for this type of obstruction was in 1914. In none of the cases was the diagnosis made preoperatively and the high mortality has in most cases been due to the fact that operation was delayed too long.

These cases have been presented because of their relative rarity and high accompaning mortality and as a reminder that strangulation of the bowel by internal hernia should always be considered with small bowel obstruction even if the patient has not had a previous abdominal operation.

THE THYROTOXIC HEART

DALE CORREA, M.D.
Minneapolis, Minnesota

Hyperthyroidism is an important etiologic factor in the production of auricular fibrillation, cardiac enlargement and congestive heart failure, but there is still considerable uncertainty as to whether hyperthyroidism *per se* is responsible for these manifestations. In short, it is uncertain whether there is a specific type of heart disease caused by hyperthyroidism, or whether the latter is merely a contributory or precipitating factor in individuals already predisposed by coincident heart disease. The term thyrocardiac is restricted to cases in which the hyperthyroidism is associated with recurrent abnormal rhythm or with congestive heart failure. Since many symptoms, such as palpatation and tachycardia, dyspnea, and precordial distress, are commonly observed with uncomplicated hyperthyroidism, their presence is not in itself sufficient to warrant the diagnosis of heart disease. In the great majority of cases of thyroid heart disease, there has been found evidence of associated arteriosclerotic, hypertensive, rheumatic, or syphilitic heart disease. Hyperthyroidism as an exclusive cause of heart disease *does* exist. This results only after a prolonged and severe thyrotoxicosis, associated with auricular fibrillation and eventual heart failure.

Objective manifestations of the thyrocardiac are a rapid pulse with a tendency for a systolic elevation of blood pressure, usually a normal diastolic blood pressure, and an increased pulse pressure. In 10 per cent of patients with thyrocardia a transient or permanent auricular fibrillation occurs. The apical heart beat is often sharp and snapping and visible. A systolic murmur is best heard at the base of the heart or at the pulmonic area. The electrocardiogram discloses *no* distinctive features except for the usual nonspecific sinus tachycardia or the auricular fibrillation. The belief that the T waves become elevated in hyperthyroidism in contrast to the characteristically low T waves in myxedema has not been substantiated. The heart shadow on roentgen examination shows no distinct features except enlargement and vigorous contractility.

Thyrotoxicosis of itself does not cause angina pectoris, but when it occurs in a patient with coronary arteriosclerosis the increased oxygen needs of the heart may precipitate this disorder. The most serious consequence of hyperthyroidism is the development of congestive heart failure. This complication is rather uncommon before the age of forty, and as stated above, usually occurs in individuals who have already suffered from some other form of heart disease or have been in the state of auricular fibrillation for a long period of time.

In older patients recognition of underlying thyrotoxicosis in heart failure may be difficult. The eye phenomena and the enlargement of the thyroid gland may be absent; in addition, the tachycardia is attributable to the condition of the heart, the increased appetite is diminished by the passive congestion of the viscera, particularly the liver, the loss of weight is obscured by the gain due to edema; and the warmth and flushing of the skin and sensitivity to heat modified by the antagonistic effects of heart failure. Despite these difficulties, thyrotoxicosis should nevertheless be recognized or suspected as an underlying etiologic factor in patients with heart disease; especially those who have a persistent tachycardia that endures after prolonged rest, attacks of paroxysmal auricular fibrillation, particularly in the absence of mitral disease, auricular fibrillation in which the ventricular rate is resistent to the slowing effects of full doses of digitalis, and high output failure in the absence of any other recognizable cause. High output failure can be recognized by an increased venous pressure with a low or normal circulation time. Even when thyrotoxicosis is suspected as the cause of congestive heart failure, the firm establishment of a diagnosis is confronted with additional difficulties. Measurement of the basal metabolic rate becomes unreliable in the presence of heart failure. The increase in the basal metabolic rate up to a plus 25 to a plus 30 per cent cannot be taken as proof of existence of overactivity of the thyroid. In such cases of heart failure where the role of thyrotoxicosis is in doubt, determination of the serum iodine is of value in arriving at a decision. Also the radioactive iodine uptake test is helpful. Unfortunately, these laboratory procedures are not yet readily available. Some help may be obtained from the estimation of the circulation time which is usually normal in the thyrocardiac in spite of congestive heart failure. But the most important and practical clinical method of establishing the presence of thyrotoxicosis in such cases, is the favorable response to the administration of iodine or one of the thiouracil compounds. The treatment of cardiac thyrotoxic disease is a medical and surgical problem. The combination of rest, quinidine, occasional digitalization and the all-important use of antithyroid drugs with the later addition of iodine is necessary to establish eu-thyroid state and additional cardiac reserve before operation can be undertaken. Radio-active iodine has become part of the armamentarium in the treatment of the thyrocardiac, particularly the recurrent thyrotoxic patient who has had previous subtotal thyroidectomy. However, the accessibility to its use is limited. In addition the general advancement of surgical techniques and anesthesia has made it possible for surgery to be practically a definitive treatment for the thyrotoxic heart.

In the recent study of forty patients by Haines and Keating with exophthalmic goiter and cardiac dysfunction, a single dose of I-131 gave good results in twenty-seven cases, fair in eight and poor in five. Retreatment improved these results. Excellent results were also reported by Crile. It seems highly probable that this promising form of treatment will replace both thyroidectomy and antithyroid drugs in the treatment of thyrocardiacs. The method of quinidinization and digitalization has offered a problem. It seems to me that the use of quinidine and digitalis is secondary in the treatment of thyrocardiac disease unless a full blown congestive heart failure is present. It is a known fact that full doses of digitalis do not slow down the rapid heart rate until the effects of the excessive thyroid hormone have been eliminated. If auricular fibrillation and heart failure persist after the basal metabolic rate is reduced to normal either by surgery or antithyrotoxic drugs, then digitalis must be administered to make the heart as efficient as possible and quinidine to restore the normal rhythm. The other means for treating heart failure such as limitation of activity, sodium restriction, diuretics, and thiamine chloride should not be overlooked.

The dosage of digitalis varies according to the size of the patient, as well as to the time interval necessary for full digitalization. The newer and more purified types of digitalis have cut down the side effects considerably. In the older patient cedilanid seems the more desirable because of its faster excretion in case symptoms of overdigitalization occur. However, digitoxin is 100 per cent absorbed and full digitalization can be obtained in one dose. This procedure however is not without danger and is rarely used.

Procaine amide may be used in place of quinidine for persisting superventricular tachycardia. Its usefulness is limited more or less to this particular type of abnormal rhythm. Quinidine has been used more extensively and most satisfactorily in restoring abnormal heart rhythm to normal sinus rhythm. The toxic effects of digitalis or quinidine occur in the thyrotoxic heart as it does in any other cardiac disease when used in sufficient dosage.

Minneapolis Surgical Society

Meeting of January 8, 1953

The President, Hamlin Mattson, M.D., in the Chair

IMMEDIATE CHOLANGIOGRAPHY IN SURGERY

HAROLD D. CAYLOR, M.D.

Bluffton, Indiana

In this study we plan to review the technical features of immediate cholangiography and discuss its uses and scope and urge its more widespread adoption as a routine procedure in gall-bladder surgery.

P. L. Mirizzi,[4,5] an Argentine Surgeon, first introduced cholangiography in 1931. Since his original observation this procedure has constantly increased in use and scope. Cholangiography has been usually classified as: (1) immediate, that done during the course of an operation on the biliary tract and in the operating room, and (2) delayed, roentgenographic study of the biliary tract performed after an operation by injection of radiopaque media through a T-tube, catheter or some other apparatus which had previously been inserted in the biliary tract. This latter study is usually made in the x-ray department of a clinic or hospital.

Our interest in this device as a useful adjunct to biliary surgery was stimulated by two cases which have been reported previously.[1] Both patients had congenital anomalies. In the first, the common hepatic ducts each contained many stones and did not combine until within about 3 cm. of the ampulla. Immediate cholangiograms would have given valuable information and saved at least one subsequent operation. In the second case the choledochus emptied into a duodenal diverticulum. Following our contact with these cases we became intensely interested in the possibilities of immediate cholangiography and its usefulness as an aid in avoiding difficulties such as we met in these cases.

In any discussion of cholangiography it is necessary that one set out his indications for exploration of the common bile duct during cholecystectomy and at other times.

In 1950, with Drs. Collett and Tirman, we published a study of the cases mentioned above. At this time our indications for choledochostomy were as follows:[1]

1. Jaundice or recent history of jaundice with or without history of chills and fever.
2. Palpable common duct stones.
3. Enlarged common duct.
4. Aspiration of dark muddy bile from the common duct.
5. Many small stones in the gall bladder.
6. Persistent biliary symptoms after cholecystectomy.
7. X-ray evidence of common duct stones.

With the passage of time and more experience the indications for exploration of the common duct have changed. For example, Glenn in October, 1952, gave these indications for exploration of the common duct for stones.[2]

Indications for exploration of common bile duct in combination with cholecystectomy:

1. Palpable stone in the common duct.
2. A history of jaundice preceded by or associated with pain or intermittent elevation of fever.
3. Thickened common duct wall with or without dilatation.
4. Contracted gall bladder containing stones.
5. Dilated cystic duct.
6. Enlarged head of the pancreas.
7. If the patient is over sixty years of age and has a prolonged history of biliary tract disease.

Our present criteria for opening the common bile duct are as follows:

1. History of jaundice with or without chills and fever.
2. Palpable common duct stones.
3. Enlarged common and/or cystic duct.
4. Many small stones in the gall bladder.
5. X-ray evidence of common duct stones.
6. Suspected congenital anomaly of biliary tract.
7. Persistent biliary symptoms after cholecystectomy.

Whenever the condition of the patient will allow after we insert a T-tube in the common duct during choledochostomy it is now our routine practice to do an immediate cholangiogram. The technique of this procedure will be discussed later when we are describing the so-called "screening" cholangiograms. Even with immediate cholangiography stones may be missed. On one occasion we inadvertently allowed a T-tube to overlie the ampulla and obscure a small stone at the distal end of the common duct. Before the T-tube is removed postoperatively another cholangiogram (delayed) is done in the x-ray department. Using the criteria above as indications for choledochostomy we have recovered

---

From the Caylor-Nickel Clinic and Clinic Hospital, Bluffton, Indiana.

calculi from the common duct in from 43 to 50 per cent of explored common bile ducts.

But what about common ducts we do not explore, what about the biliary dyskinesia cases, or persistence of symptoms after cholecystectomy—stricture, neoplasm, et cetera? What can we do to avoid these unpleasant situations for the patient and surgeon alike? Again quoting Glenn,[2] 'in all patients with stones in the gall bladder one in ten will have stones in the common duct."

We feel that what we call an immediate "screening" cholangiogram is an attempt to avoid leaving silent stones behind in the duct, recognizing stricture or anomalies or obstructions at the time of the original biliary tract surgical procedure when one has the best opportunity to correct these difficulties.

Many devices have been employed for cholangiograms without incising the common bile duct: (1) aspiration of the gall bladder and injection of the radiopaque material via a hypodermic needle into the gall bladder, cystic or common duct; (2) insertion of a catheter through the partly incised cystic duct and injection of the dye through this catheter. This method we have used and we will describe it in detail now.

Technique Employed for Immediate Cholangiography

1. Plywood cassette holder containing a 14x17 film on operating table under patient.

2. Make any type of incision which seems most feasible to the surgeon.

3. Sew on drapes.

4. Isolate the cystic duct and ligate it close to the gall bladder to avoid forcing stones out of the gall bladder.

5. Pass another ligature around the cystic duct close to common duct.

6. Incise the cystic duct widely enough to insert catheter.

7. After catheter (ureteral or urethral, usually size No. 6) has been inserted, ligate this catheter in place. Don't insert catheter too far or poor visualization will be obtained of the hepatic ducts and catheter may go through the ampulla.

8. Start injection of warmed 70 per cent diodrast and inject with gentle pressure 3-5 cc. and take a film. Be careful the catheter does not overlie the duct.

9. X-ray factors for films: Kv. 70-75, Distance 30 inches, Ma. 60, Time 1/4 seconds. Angle tube to avoid spine.

10. Inject diodrast at least 5 cc. more and take another cholangiogram.

11. Leave the catheter in place and do a cholecystectomy.

12. When films are developed and if they are unsatisfactory, repeat cholangiogram can be made because the catheter is still in the duct.

13. If the films are adequate and there is no reason for further procedure on the common duct the catheter is removed and the stump of the cystic duct ligated or sutured.

This technique which we have developed is almost exactly the same as that described by Mixter and colleagues in 1951,[6] although we were unfamiliar with his work when we were developing this technique.

Certain features deserve particular mention. Since we have been using this procedure and meticulously exposing the cystic duct we have been much more aware of variations in this organ and the structures adjacent to it; in other words, our exposure and visibility have been improved. With increasing practice only about ten minutes is added to the time of a cholecystectomy when immediate cholangiograms are performed.

The apparatus we have used is available in any well-equipped operating room. Probably better technical roentgenograms could be obtained with a built-in Bucky in the operating table or even operating on a urological table in the cystoscopic room as some workers have done, notably Dean MacDonald.[3] Using the technique we have described we have regularly obtained cholangiograms of diagnostic quality. It is important and necessary to have the close co-operation and teamwork of the x-ray department for successful immediate cholangiograms. One important feature in the technique described is using a high milliamperage which shortens the time of exposure to 1/4 second. Synchronizing the exposure with the end of exhalation, movement was reduced to a minimum.

Summary

We urge routine use of immediate cholangiography where it is applicable in gall-bladder surgery. Immediate cholangiography is not infallible but by using this device unsuspected stones, strictures, obstructions and anomalies of the biliary system may be discovered and treated at the optimum time, during the first surgical procedure on the biliary tract. The operating surgeon will have a greater certainty and sureness from the use of this adjunct to biliary tract surgery.

Bibliography

1. Collett, Hugh S.; Caylor, Harold D., and Tirman, Wallace S.: Choledocholithiasis. Am. J. Surg., 80:514-522 (Nov.) 1950.

2. Glenn, Frank: Common duct exploration for stones. Surg., Gynec., & Obst., 95:431-438 (Oct.) 1952.

3. MacDonald, Dean: Further observations on the clinical value of Cholangiography. Am. J. Surg., 80:349-355, 1950.

4. Mirizzi, P. L.: La colangiografia durante las operaciones de las vias biliares. Bol. y trab., Soc. de cir. de Buenos Aires, 16:1133; 1266; 1413; 1466, 1932.

5. Mirizzi, P. L.: Operative Cholangiography. Surg., Gynec., & Obst., 65:702-710 (Nov.) 1937.

6. Mixter, Charles J.; Hermanson, Louis, and Segel, Arnold L.: Operative Cholangiography. Ann. Surg., 134:346-350, 1951.

EXTENDED OR SUPER-RADICAL MASTECTOMY FOR CANCER OF THE BREAST

F. JOHN LEWIS, M.D.
Minneapolis, Minnesota

1. *Limitations of the Conventional Radical Mastectomy.*—The radical mastectomy operation for carcinoma of the breast, developed in the nineteenth century through a logical series of steps that culminated in the work of Halsted and Willy Meyer in 1894,[4,9] has been thought of as model operation to be emulated, if possible, in part of the body diseased with cancer. It is conceived to remove, in one continuous segment, not only the primary cancer but the most likely areas of lymphatic metastases as well. This concept has become a fundamental one in the entire realm of cancer surgery and yet it is now apparent that the conventional radical mastectomy itself does not fulfill this basic aim. Regional lymphatic drainage areas, which frequently harbor metastases, remain untouched by the conventional operation.

Doubtless the low cure rate which follows radical mastectomy for patients having cancers already metastasized to the axillary nodes is due, in large part, to the residual cancer left behind in these other regional areas. Failure among those with diseased axillary nodes must, in many instances, mean that some cancer has been left behind just beyond the area of dissection. In such cases, the areas most likely to be involved are the supraclavicular or parasternal lymph node chains.

The importance of the parasternal nodes has been emphasized by recent studies indicating the freqency with which they are involved in cancer of the breast. Using a short parasternal incision prior to the conventional operation, Handley and Thackray[7] removed nodes from the second intercostal space and found cancerous involvement in 38 per cent of all their cases.

Of those with axillary lymph node metastases, 52 per cent had parasternal involvement in addition. More recently Dahl-Iversen[2] has studied fifty-three cases and found the parasternal nodes involved with cancer in 19 per cent, while if only those with axillary involvement were considered, the percentage of parasternal involvement rose to 24 per cent. A further observation of interest in both of these series was the high percentage of parasternal node involvement in those cases with medially located cancers of the breast. In the English series metastases to the parasternal nodes were found in 71 per cent of the cases with medially located cancers but in only 21 per cent of those with laterally placed cancers. The parallel figures for the Dahl-Iversen series were 30 per cent and 12 per cent.

Residual cancer in the supraclavicular nodes may also be the cause for failure of the conventional radical mastectomy. Some recent evidence emphasizing the frequency with which these nodes are involved has been published by Andreassen and Dahl-Iversen.[7] They did a supraclavicular dissection in addition to the usual radical mastectomy in ninety-eight cases and found cancer involving the supraclavicular nodes in 17 per cent of all their cases while 33 per cent of those in the series with axillary node involvement had supraclavicular metastases as well.

The radical mastectomy is an operation that requires amendment. In its traditional form it fails to cure many so-called operable cases of cancer. Yet despite this fact, and further, despite the evidence that among many uncured patients who had the operation, cancer was present in the supraclavicular or parasternal nodes at the time of surgery, the operation for cancer of the breast has not, in the past, been successfully extended into these areas. As generally used today, it is an incomplete operation limited by two anatomical barriers: the clavicle and and bony chest wall.

2. *Suggestions for Extension of the Radical Mastectomy.*—Surgeons treating carcinoma of the breast have long been aware of the limited nature of the conventional operation and a few have tried to extend it to encompass more of the lymphatic drainage areas. The first of these was Halsted himself who added a supraclavicular dissection to the radical operation in over 100 cases.[5] Later Sampson Handley[6] removed some of the parasternal lymph nodes in a few patients with carcinoma of the breast but he did not recommend general adoption of this modification. A number of others have, more recently added either a parasternal or a supraclavicular dissection to the radical mastectomy but not both together.[1,2,7,10] The extended radical operation to be discussed here has been described previously by Wangensteen.[11] It adds, for the first time, both a supraclavicular and a mediastinal dissection to the usual radical mastectomy.

3. *Assumption Upon Which Use of Super-Radical Operation Is Based.*—Before describing the technique of this operation, it is important to consider some of the assumptions that are implicit in the use of this type of treatment for cancer of the breast. Though most, if not all, of these assumptions have been under attack at one time or the other, we feel that they are all tenable and at least sound enough to justify a trial of the present surgical approach.

(a) It must first of all be granted that cancer of the breast can be cured even after it has spread to the lymph nodes. The fact that the Halsted radical mastectomy cures many patients whose disease has spread to the axillary lymph nodes establishes this point. Many patients with lymph node involvement have been cured and perhaps more can be cured if more lymph nodes are removed.

(b) It must also be assumed that cancer of the breast

Inaugural Thesis presented to the Minneapolis Surgical Society on January 8, 1953.

From the Department of Surgery, University of Minnesota Medical School, Minneapolis.

spreads largely through the lymphatics and in a progressive manner. There should then be a number of cases in which it has spread beyond the areas of the conventional radical mastectomy, on to some of the supraclavicular or parasternal nodes, but still no further. This concept of an essentially progressive lymphatic spread is important not only for the acceptance of this operation; it is a basic one in most cancer surgery.

(c) The third and perhaps the weakest assumption we have made is that cancer of the breast can be cured by a discontinuous excision. In the operation under consideration it has been technically unfeasible to remove all the lymphatic drainage areas in direct continuity. It is felt that this factor in technique may not be of great importance, for a separate dissection of the regional lymphatics has been practiced successfully in other areas of the body, especially in the head and the extremities.

(d) Finally, we have assumed that surgical excision is a better way in which to treat cancerous lymph nodes than in roentgen therapy. Though McWhirter of Scotland,[8] especially, stands against this contention, it is a principle accepted by many cancer therapists and a basic tenent of most cancer operations.

Technique

1. *Extent of the Operation.*—The super-radical mastectomy may be done either as a one or two-stage operation. In either case there are three main areas of dissection. First, there is the conventional radical mastectomy and axillary dissection; this is followed by a supraclavicular and cervical dissection extending as high as the upper border of the thyroid cartilage; and finally, a parasternal and mediastinal dissection are done. This final part of the dissection includes not only an excision of the entire parasternal lymph node chain along with the internal mammary blood vessels, but a mediastinal dissection as well, which in turn includes a partial or complete thymectomy and a removal of the lymph node bearing tissue along the great vessels down to the heart.

2. *Incisions.*—The operative field is usually exposed through the two incisions. The conventional mastectomy and axillary dissection are done through an oblique incision encompassing the lesion and extending out on the anterior axillary fold while the cervical and mediastinal dissections are done through a second more medially placed incision extending from the neck down over the lateral edge of the sternum. Care is taken to see that enough skin is left to allow primary closure of these wounds.

3. *Elevation of the Clavicle and Division of the Sternum.*—Exposure of the subclavicular and mediastinal areas in a continuous and easily accessible field is made possible by dividing the bony framework of the thoracic inlet. The first rib is removed from its sternocostal junction laterally nearly to the angle after which the sternum is split in the midline from the jugular notch down to the level of the fourth interspace. To allow elevation of the clavicle, with its attached one-half of the manubrium, and spread of the sternum, the sternum is divided transversely at the first and fourth intercostal spaces. With retraction of the sternum, excellent exposure of the upper mediastinum is provided. After the dissection is completed, fixation of the sternum is obtained by wiring the divided portions tightly together.

4. *One or Two-Stage Operation.*—Though a one-stage procedure is obviously to be preferred as a more satisfactory cancer operation, there has been, in general, a smoother convalescence among those patients whose operation has been divided into two stages. Most of those who have had the operation done in two stages were patients for whom the extended dissection was not contemplated until the case was reconsidered after the conventional mastectomy, in light of the microscopic finding of diseased axillary nodes. However, in a number of more recent cases a two-stage operation was planned in the beginning. With this approach the morbidity and mortality have been lower but we are unable, as yet, to measure its relative effectivness in eradicating the cancer.

Indications

Surgery as extensive as that described here is not indicated for all patients with carcinoma of the breast. The increased hazard associated with operations of this magnitude dictates a carefully limited usage. There are obviously many patients with localized carcinoma of the breast in whom an extensive dissection is not necessary for cure. It is rather the patients who are most likely to exhibit extension of their cancer beyond the reach of the Halsted operation who should be selected for this more extensive dissection. As indicated by the evidence presented earlier, the best sign at present for detecting these patients is the presence of metastases in the axillary lymph nodes. Hence, the operation is primarily indicated for those patients who have unequivocal evidence of axillary metastases at the time of surgery. It has also been used, as a secondary procedure, for those in whom axillary metastases have been found on subsequent pathological examination of the operative specimen, though the metastases were undetected at the time of surgery. The extended operation has further been used for some patients who, after a Halsted mastectomy, have shown evidence of residual cancer, usually in the supraclavicular or parasternal regions.

Perhaps the presence of a medially located breast lesion, should be sufficient indication for the use of this type of operation, even if the axillary nodes are not involved. Certainly, the evidence of the Danish and English investigators, confirmed in our own experience, showing the high incidence of parasternal lymphatic involvement among patients with medial lesions, supports such a course of action.

Findings

1. *Involvement of Lymph Nodes Beyond the Area of the Conventional Mastectomy.*—The super-radical mastectomy has been used for the treatment of fifty patients with carcinoma of the breast and among these the most stricking observation has been the common

TABLE I. FREQUENCY OF CANCER BEYOND THE LIMITS OF THE CONVENTIONAL DISSECTION

Type of Operation	Number of Patients	No Cancer Beyond Conventional Dissection	Cancer Beyond Conventional Dissection
One Stage	28	10	18 (64%)
Two Stage	22	10	12 (55%)
Total	50	20	30 (60%)

TABLE II. PARASTERNAL METASTASES WITH MEDIAL OR LATERAL LESIONS

Site of Breast Lesion	Mediastinal or Parasternal Metastases:	
	Present	Absent
Medial	6	3
Lateral	11	16

finding of cancer outside of the limits of the conventional mastectomy (Table I). In the entire series of cases, lymph node involvement has been found beyond the areas of the conventional dissection in 60 per cent. Twenty-eight of the patients had their super-radical mastectomy as a one-stage procedure and of these eighteen or 64 per cent had cancer in nodes that would not have been removed by the radical mastectomy alone. Of the twenty-two patients who had a two-stage operation, for one reason or another, twelve or fifty-five per cent had cancer found at the second or super-radical stage of the operation. This is impressive evidence demonstrating how frequently the conventional radical mastectomy is an inadequate operation.

Since, as was mentioned earlier, a number of the operations were done in women with very extensive cancers, or for patients with residual or recurrent cancer, the percentage of those having cancer beyond the region of radical mastectomy in this series is probably higher than would be found among all patients with lesions generally considered to be operable. However, it is important to note that if just those patients operable by the criteria of Haagensen and Stout[3] are considered, cancer was still found beyond the range of the conventional operation in a high percentage of cases, in 49 per cent.

2. *Medial Lesions and Mediastinal Nodes.*—Another finding of importance is illustrated in Table II which shows the relative frequency of mediastinal metastases in medial as contrasted with laterally located breast lesions. A high proportion of patients with medially placed lesions have metastases in the parasternal or mediastinal lymph nodes. This is not a surprising finding; it suggests, as was mentioned above, that all patients with medially located cancers should have a mediastinal dissection.

Results

It is clear that the super-radical mastectomy, in a number of cases, removes cancer that would have been left behind by the conventional mastectomy alone. Still, it is not yet established that surgical removal of this additional cancer will result in any more cures than are obtained with less radical methods. The long period of observation that any evaluation of cancer therapy demands is not yet possible here. For the present we must concern ourselves only with the immediate results.

In addition to the fifty patients who have had the operation for carcinoma of the breast, four others have had it for miscellaneous conditions and in the entire group there were seven operative deaths, or an operative mortality rate of 13 per cent. All but one of these deaths were among those who had had the operation in one stage, a fact which at least for a while,, directed our attention to the possibility of doing an adequate operation in two stages. Deaths were also more frequent among the older patients and because of this we have not recently used the operation for patients over seventy years of age.

The operative deaths were caused by a rather wide variety of complications, some of which may in the future be preventable. Two patients died of convulsions in the early postoperative period, and, though the possibility of cerebral air embolism secondary to a pulmonary tear was considered, the explanation of their deaths is not clear. A third fatality was more obviously due to an undetected tear in the lung for this patient had a course complicated by a pneumothorax, atelectasis, and paradoxical breathing. One patient died suddenly in the early postoperative period with a hyperthermia in which the temperature reached 106° F. Two patients died of secondary hemorrhages from the subclavian and common carotid arteries, one five days postoperatively, and one thirty-one days postoperatively following a complicated course in which wound breakdown was a prominent feature, and finally, one patient died of a pulmonary embolism.

The mortality of an extended operation for cancer of the breast need not be high. In our own experience the technique and management have gradually improved with a consequent reduction in mortality. In fact, the last fourteen super-radical dissections have been done without any deaths. The morbidity of the operation is, and doubtless will continue to be, higher than that of the conventional radical mastectomy, yet the ultimate deformity is no greater.

Summary

Since the conventional radical mastectomy is demonstrably an incomplete operation, an extended or super-radical mastectomy has been devised. This operation adds cervical, supraclavicular, retrosternal and mediastinal dissections to the conventional radical mastectomy. Using this operation primarily for patients whose cancer has already metastasized to the axillary lymph nodes, a high proprotion (approximately 60 per cent) have been found to have cancer in regional nodes which would not have been removed by the more limited radical mastectomy. Since its ultimate worth cannot yet be evaluated, the extended operation is at present deserving of only a limited trial for patients whose disease would probably not be removed by less radical operations.

Bibliography

1. Andreassen, M., and Dahl-Iversen, E.: Recherches sur les metastases microscopiques des ganglions lymphatiques sus-claviculaires dans le cancer du sein. J. internat. chir., 9:27-40, 1949.
2. Dahl-Iversen, E.: Recherches sur les metastases microscopiques des ganglions lymphatiques parasternaux dans le cancer du sein. J. internat. chir., 11:492-501, 1951.
3. Haagensen, C. D., and Stout, A. P.: Carcinoma of the breast. III. Results of treatment, 1935-1942. Ann. Surg., 134:151-172, 1951.
4. Halsted, W. S.: The results of operations for the cure of cancer of the breast performed at the Johns Hopkins Hospital from June, 1889, to January, 1894. Ann. Surg., 20:497, 1894.
5. Halsted, W. S.: The results of radical operations for the cure of carcinoma of the breast. Ann. Surg., 46:1-19, 1907.
6. Handley, W. S.: Parasternal invasion of the thorax in breast cancer and its suppression by the use of radium tubes as an operative precaution. Surg., Gynec. & Obst., 45:721-727, 1927.
7. Handley, R. S., and Thackray, A. C.: The internal mamary lymph chain in carcinoma of the breast. Study of 50 cases. Lancet, 257:276-278, 1949.
8. McWhirter, R.: Treatment of cancer of breast by simple mastectomy and roentgenotherapy. Arch. Surg., 59:830-842, 1949.
9. Meyer, W.: An improved method of the radical operation for carcinoma of the breast. M. Rec., 46:746, 1894.
10. Urban, J. A., and Baker, H. W.: Radical mastectomy in continuity with en bloc resection of the internal mammary lymph-node chain. Cancer, 5:922-1008, 1952.
11. Wangensteen, O. H.: Remarks on extension of the Halsted operation for cancer of the breast. Ann. Surg., 130:316, 1949.

References

1. Edwards, H., and Stewart, W.: Hernia through the foramen of Winslow-emerging through the gastro-hepatic omentum. Brit. M. J., 1:343, 1943.
2. Frimann-Dahl: Radiological experiences in true strangulating obstructions. Acta radial., 35:85-100, 1951.
3. Hamilton, I., and Hardy, J. E. S.: Hernia through the foramen of Winslow-emerging through the gastro-hepatic omentum. M. J. Australia, 1:805, 1946.
4. Hansmann, G. H., and Morton, S. A.: Intra-abdominal hernia. Arch. Surg., 39:973, 1939.
5. Haxton, H. R.: Hernia of caecum into lesser sac of peritoneum complicated by volvulus. Brit. M. J., 2:792, 1944.
6. Johnson, J. Robert: Internal Hernia. Arch. Surg. 60:1171, 1950.
7. Lewis, D.: Practice of Surgery. Hager, 7:21, W. F. Prior Co., 1948.
8. Lewis, Joseph N.: Hernia through the foramen of Winslow. Brit. M. J., 1511 (Dec. 31) 1949.
9. McLaughlin, C. W., and Brush, J. H.: Factors responsible for improved results in management of acute intestinal obstructions. Arch Surg. 61:115, 1950.
10. Rennie, J. G.: Hernia into the foramen of Winslow. West Virginia M. J., 7:179, 1946.
11. Venner, Barton: Hernia through the foramen of Winslow. M. J. Australia, 2:678, 1949.
12. Watson, L. F.: Hernia. Edition 3. Philadelphia: C. V. Mosby Co., 1948.

WATCH IT, DOC.

(Continued from Page 753)

hospitals. This viewpoint was taken by the Medical Society of the City of New York, by the King's County Medical Society of Brooklyn and the New York State Medical Society. The plan seemed to smack too much of socialized medicine, and the fear was expressed that such a scheme might be attempted elsewhere throughout the state where additional housing projects were being planned. It seems such attempts are being made.

It must have irritated every thoughtful physician to read that a member of his profession could be capable of saying what Dr. Joseph E. Corr, Chairman of the Committee on Medical Economics of the Medical Society of New York, is purported to have facetiously said. It is with a great deal of relief that we are informed that Dr. Corr never made any such remark and has written *Life* demanding a retraction. The *Life* editorial writer obtained his information from an article in the *New York Times* of April 7, 1953, in which Dr. Corr was so quoted. On that same date, April 7, 1953, Dr. Corr wrote the *New York Times* that he had been falsely quoted.

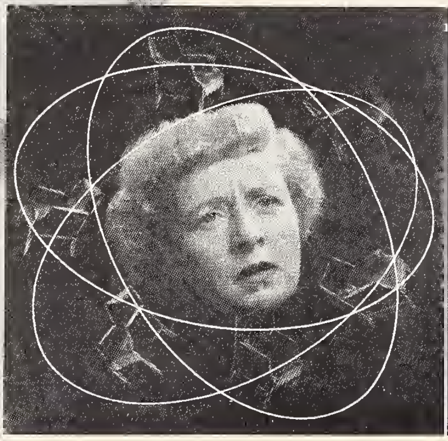
Here is a typical example of a smart-aleck reporter on the *New York Times* writing a false report and the *Life* editorial writer perpetuating the falsehood by failing to check the correctness of the report, to the detriment of the medical profession. Apologies are in order.

For the information of *Life,* let it be said that the medical profession can be counted on to continue to oppose socialism wherever it raises its ugly head and to support the American system of free enterprise. We are inclined to agree with Herbert Hoover that the American economy cannot exist part socialistic and part free.

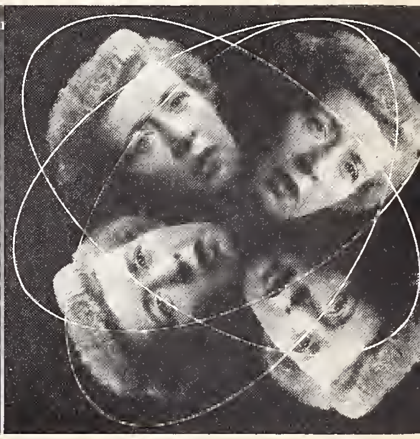
Perhaps the most important factor in the incidence among hospital personnel is the undiagnosed case of tuberculosis. The only way to prevent contact with such sources is to discover these unsuspected cases earlier than seems possible in most general hospitals. It is suggested that the best means of offering this protection to medical personnel is to make routine chest films of every patient admitted to a hospital. WILLIAM A. ABRUZZI, JR., M.D., and RUFUS J. HUMMEL, M.D., *The New Eng. J. of Med.,* April 23, 1953.

1

1. *Dizziness . . . movement is within the head.*
2. *Objective vertigo . . . the environment is in motion.*
3. *Subjective vertigo . . . the patient himself moves in space.*



2



3

TYPES OF VERTIGO:

Their symptomatic relief with Dramamine®

The disagreeable sensations of dizziness which physicians are frequently required to explain to patients have been described by Simonton[1] as varying from a slight sensation of confusion to severe vertigo.

While dizziness or giddiness is classified as a sensation of unsteadiness with a feeling of movement within the head, in vertigo the environment seems to spin (objective vertigo) or the body to revolve in space (subjective vertigo). Labyrinthine disturbances are likely to cause a sensation of rotation. Among the more common causes of dizziness or vertigo, this author lists: Damage to the vestibular nuclei or tracts in the central nervous system, involvement of the vestibular end organs by disease of the ear, Ménière's disease, toxicity of drugs, ocular vertigo from sudden diplopia, visual field defects, looking down from heights and motion sickness due to hyperactive labyrinthine reaction from riding in vehicles.

Dramamine (brand of dimenhydrinate) has proved effective in treating many of these disturbances. The indications for which Dramamine is now Council accepted include: Motion sickness, the nausea and vomiting associated with pregnancy, certain drugs, electroshock therapy and narcotization; vestibular dysfunction associated with streptomycin therapy; the vertigo of Ménière's syndrome, hypertensive disease and that following fenestration procedures, labyrinthitis and radiation sickness.

---

1. Simonton, K. M.: The Symptom of Dizziness, Arizona Med. 6:28 (Sept.) 1949.

SEARLE *Research in the Service of Medicine*

In Memoriam

LEON MORRELL BOYD

Dr. Leon M. Boyd of Alexandria, Minnesota, died May 29, in a local hospital.

He was born in Chautauqua, New York, August 18, 1883. He was graduated from the Alexandria High School in 1901 and from the University of Minnesota Medical School in 1908. He took postgraduate work from the Philadelphia Polyclinic in 1909 and from the Manhattan Eye and Ear Clinic in New York City, the Bellevue Hospital Medical School and the Cornell Medical School in 1914. Later he studied at Tulane Medical School in New Orleans.

Dr. Boyd was a member of the Park Region District Medical Society, the Minnesota State Medical Association and the American Medical Association. He was a member of the First Congregational Church and a member of its Board of Trustees for many years. He had been a member of the Alexandria Public Library Board and served on the School Board of District No. 2 for twenty-four years.

Dr. Boyd served on the University of Minnesota Advisory Board and was a member of Alpha Tau Omega Academic Fraternity and Alpha Kappa Kappa Medical Fraternity. He was a member of the Masonic Lodge and a former member of the Kiwanis Club. He was also a member of the American Academy of Ophthalmology and Otolaryngology.

Dr. Boyd is survived by his wife and two children, James and John. One son, Leon Boyd, Jr., passed away in 1936.

HARRY W. CHRISTIANSON

Dr. Harry W. Christianson, of Minneapolis, died on June 11, 1953, at his home following a year's retirement due to heart disease.

Dr. Christianson was born at Belgrade, Minnesota, August 5, 1893. He earned his B.S. degree and also a degree in pharmacy before obtaining his M.D. from the University of Minnesota in 1920. He interned at the Swedish Hospital, Minneapolis, and was in private practice at Wykoff, Minnesota, from 1921 to 1929. He then took a residency in proctology at the Mayo Clinic from 1929 to 1932. In 1932 he began practice in Minneapolis, limiting his practice to proctology.

Dr. Christianson was clinical associate professor of proctology at the University of Minnesota Medical School, was proctologist for the Students Health Service at the University of Minnesota, a Fellow of the American College of Surgeons, and a member of the American Proctological Society. He was also a diplomate of the American Board of Surgery and Proctology. He was a member of the Hennepin County Medical Society, the Minnesota State Medical Association and the American Medical Association.

Membership in other organizations included the Minneapolis Club, Athletic Club, Masons, Knights Templar and Scottish Rite.

Dr. Christianson is survived by his wife, the former Bessie Dawson Miller; a daughter, Mrs. Betty L. Anderson, and two sons, Harry J. and George Allen.

JOHN L. CRENSHAW

Dr. John L. Crenshaw of the Section of Urology of the Mayo Clinic, Rochester, Minnesota, passed away June 17, 1953. He was seventy-one years of age.

Dr. Crenshaw was born in Elizabeth, New Jersey, on January 2, 1882. He obtained his M.D. degree from the University of Virginia in 1906. He interned at University of Virginia Hospital in 1906 and 1907. From 1907 to 1910, he practiced medicine at Charlottesville, Virginia. He was an intern at St. Mary's Hospital, Rochester, Minnesota, in 1910 and 1911 and then was appointed associate in urology in the Mayo Clinic. Under the Mayo Foundation, Graduate School, University of Minnesota, he became assistant professor of urology in 1920 and associate professor in 1923.

Entering the field of urology when he did, Dr. Crenshaw contributed to its development; he was author or co-author of about twenty articles on his specialty. Those who worked with him and who came under his care, however, valued him even more as a practitioner. He always was where he was supposed to be, doing what he was supposed to do, with superb, down-to-earth judgment and bluff humaneness.

Dr. Crenshaw was certified by the American Board of Urology in 1935. Besides membership in the American Medical Association, he held membership in the American Association of Genito-Urinary Surgeons and in the American Urological Association, of the North Central Branch of which he was secretary-treasurer in 1924-25 and president in 1925-26. He also was a member of Sigma Xi and of Phi Rho Sigma.

In World War I, Dr. Crenshaw was commissioned captain in the Medical Corps, United States Army. He was chief of the urological service at Embarkation Hospital, Camp Stuart, Newport News, Virginia.

Few men of Rochester were more enthusiastic fishermen, hunters and gardeners than was Dr. Crenshaw. It was, therefore, saddening to his friends that the illness which caused his retirement in 1944 was a rheumatic condition which immobilized him. To see this vigorous, irrepressible man confined to a wheel chair was touching. The doctor, however, was not a seeker of sympathy for himself, and the lines of humor were not erased from his face.

Dr. Crenshaw and Nell Bryant were married in 1919. Their son, John L. Crenshaw, is a physician in Salt Lake City and their son, William B. Crenshaw, also a physician, is at the University of Michigan, in Ann Arbor. Their daughter is the wife of Dr. G. R. Diessner, of Rochester.

HENRY DUNCAN

Dr. Henry Duncan, of Marietta, Minnesota, died on May 22, 1953, at the age of eighty-five years.

Dr. Duncan was born near the village of Boyfield, Ontario, Canada, on November 1, 1867. At the age of four he came with his father to Maryville, Missouri. He was graduated from Maryville Seminary and after several years of teaching school and farming, studied medicine at Rush Medical College in Chicago, graduating in 1900. He came to Marietta in 1902 where he practiced for thirty-two years, retiring at the age of sixty-eight.

Dr. Duncan is survived by his wife, the former Clara Olson. They have four children: Donald of Galveston, Texas; William of Webster, South Dakota; Mary (Mrs. L. M. Hammer) of Mankato; and Charles of Eugene, Oregon.

CARL O. ESTREM

Dr. Carl O. Estrem, of Fergus Falls, died on June 5, 1953, of heart disease. Although he suffered the first attack of coronary occlusion in 1940, he maintained an active interest in his practice of medicine and other activities, and continued to attend medical meetings regularly until a few weeks prior to his death.

Dr. Estrem was born in Willmar, Minnesota, May 30, 1880. His preliminary education was obtained at the Willmar High School and the Willmar Seminary. He received his B.A. degree from Luther College, Decorah, Iowa, in 1901. He then was the assistant cashier of the New London (Minn.) State Bank for two years but resumed his studies and was graduated from the University of Minnesota School of Medicine in 1907, followed by internships in Deaconess Hospital and General Hospital in Minneapolis.

In 1912, Dr. Estrem married Edith Beatrice Thorpe. The seven children born into this family include two sons who are members of the Park Region Medical Center, which Dr. Estrem founded, as the Estrem Clinic, in 1939. Dr. Robert D. specializes in Surgery and Dr. Ralph L., in X-ray and Internal Medicine.

Dr. Estrem practiced medicine at Madison, South Dakota, from 1908-09, and at Detroit Lakes from 1909-14. He specialized in surgery after moving to Fergus Falls in 1914.

Dr. Estrem was a member of the Park Region District and County Medical Society, the Minnesota State Medical Association, the American Medical Association, the American College of Surgeons, Kiwanis Club, and the First English Lutheran Church, of Fergus Falls. He had been consulting surgeon to the Fergus Falls State Hospital staff since 1929. He was an ardent sportsman and conservationist and was especially fond of fishing and duck hunting.

Dr. Estrem was always keenly interested in all phases of church work, and, after becoming a Fellow of the American College of Surgeons, he devoted much of his time and efforts to raising all the standards of hospital service at St. Luke's Hospital, Fergus Falls, which he

The Knox Gelatine Diet and the Convalescent Child

Convalescence is associated with protein loss of serious magnitude, yet little is known of the fundamental nature of the loss.[1] Loss of nitrogen cannot be prevented; however, nitrogen balance can be maintained, wound healing enhanced, and convalescence shortened, by a high protein diet.[2]

Otherwise the patient uses his own "available" nitrogen stores to accomplish the healing defect.[3]

The patient "is better off before his nitrogen stores have been wasted than after. Surgeons have long noted that chronically debilitated patients are poor operative risks."[1] Decubitus ulcers heal quickly in heavily protein-fed patients.[4]

These facts are clear, as is also the fact that Knox Gelatine, which is pure protein, offers a useful method of supplementing the ordinary dietary protein.

Knox Gelatine is easy to digest, while its supplementary dietary nitrogen will furnish protein without other substances, especially salts of potassium which are retained during convalescence; without excess fat and carbohydrate, which are not needed especially; and without a food volume which may interfere with intake.

1. Howard, J. E. Protein Metabolism During Convalescence After Trauma. Arch. Surg. 50:166, 1945.
2. Co Tui, Minutes of the Conference on Metabolism Aspects of Convalescence Including Bone and Wound Healing. Josiah Macy, Jr. Foundation, Fifth Meeting Oct. 8-9, p. 57, 1943.
3. Whipple, G. H. and Madden, S. C. Hemoglobin, Plasma Protein and Cell Protein: Their Interchange and Construction in Emergencies. Medicine 23:215, 1944.
4. Mulholland, J. H., Co Tui, Wright, A. M., Vinci, V., and Shafiroff, B. Protein Metabolism and Bed Sores. Am. Surg. 118:1015, 1943.

KNOX
SPARKLING
UNFLAVORED
GELATINE

AVAILABLE AT GROCERY STORES IN 4-ENVELOPE FAMILY SIZE AND 32-ENVELOPE ECONOMY SIZE PACKAGES

Write today for your free copy
"Feeding the Sick and Convalescent."
Knox Gelatine, Johnstown, N. Y.; Dept. MM

KNOX GELATINE U.S.P. ALL PROTEIN NO SUGAR

THE
MEDICAL PROTECTIVE
COMPANY
FORT WAYNE, INDIANA

PROFESSIONAL PROTECTION
EXCLUSIVELY
SINCE 1899

specialized service
assures *"know-how"*

MINNEAPOLIS Office:
Robert L. McFerran, Rep.,
2426 Clinton Ave. So., Apt. E-8,
Telephone Fillmore 1292

Cook County Graduate School of Medicine

POSTGRADUATE COURSES—1953

SURGERY—Intensive Course in Surgical Technic, two weeks, starting August 3, September 14, September 28
  Surgical Technic, Surgical Anatomy and Clinical Surgery, four weeks, starting August 3
  Surgical Anatomy and Clinical Surgery, two weeks, starting August 17
  Basic Principles in General Surgery, two weeks, starting September 21
  Surgery of Colon and Rectum, one week, starting September 21
  General Surgery, one week, starting October 5
  General Surgery, two weeks, starting October 12
  Thoracic Surgery, one week, starting October 12
  Esophageal Surgery, one week, starting October 19
  Breast and Thyroid Surgery, one week, starting October 26
  Gallbladder Surgery, ten hours, starting October 26
  Fractures and Traumatic Surgery, two weeks, starting October 26
GYNECOLOGY—Intensive Course, two weeks, starting September 21
  Vaginal Approach to Pelvic Surgery, one week, start- [illegible]
OBSTETRICS—Intensive Course, two weeks, starting October 5
MEDICINE—Intensive General Course, two weeks, starting September 28
  Electrocardiography and Heart Disease, two weeks, starting October 12
  Allergy, one month and six months, by appointment
CYSTOSCOPY—Ten-day Practical Course starting every two weeks
UROLOGY—Intensive Course, two weeks, starting September 28

TEACHING FACULTY—ATTENDING
STAFF OF COOK COUNTY HOSPITAL

ADDRESS: REGISTRAR, 707 South Wood Street,
Chicago 12, Illinois

served as Chief of Staff for many years. It was Dr. Estrem who conceived the idea of establishing the Northern Minnesota Medical Association and he devoted much effort towards its formation and development. In his passing, Medicine has lost a capable surgeon, a real leader and a Christian gentleman.

JAMES LAWRENCE McLEOD

Dr. J. L. McLeod of Grand Rapids, Minnesota, passed away on June 8, 1953, at the age of fifty-two.

Dr. McLeod was born in Estevan, Saskatchewan, Canada, on May 19, 1901. He obtained his M.D. from the University of Manitoba Medical School in Winnipeg in 1926. After interning at St. Boniface Hospital in Winnipeg he practiced at Bovey, Minnesota, from 1926 to 1932, when he moved to Grand Rapids where he became senior partner in the Itasca Clinic.

Dr. McLeod was president of the Independent Progressive Voters Association of Minnesota and was a member of the state central committee of the Farmer-Labor party in 1933. He served as state senator from 1934 to 1937 from the 52nd District. He was elected District Governor of Rotary International at Denver, Colorado, in 1941. This district included Minnesota, North Dakota, Wisconsin and Ontario.

He was an outstanding athlete in his youth and obtained nine M's in undergraduate days at the University of Manitoba in football, track and basketball.

He was a member of the St. Louis County Medical Society, the Minnesota State Medical Association and the American Medical Association.

Dr. McLeod is survived by his wife, Janet; a son, Robert, and a daughter, Mrs. Diane Stackle.

WILLIAM REGINALD McCARTHY

William R. McCarthy, for many years a surgeon in St. Paul, died on June 22, 1953, in Van Nuys, California. He was sixty-six years of age and died of carcinoma of the bronchus.

Dr. McCarthy was born in Saint Paul May 19, 1887. He attended St. Thomas Academy in St. Paul, the University of Minnesota Medical School and Marquette Medical School where he was graduated in 1911. He interned at the City and County hospital in Saint Paul.

Dr. McCarthy was a Fellow of the American College of Surgeons. He was president of the Ramsey County Medical Society in 1943 and was a First Vice President of the Minnesota State Medical Association.

In 1945 he became the medical director for the Eighth United States Civil Service medical service for rehabilitation of veterans and civilians. He had an appointment to the State Hospital in Anoka for a brief period before he became ill in March, 1953, and moved to California where his son, John R., lives in Tarzana, and his daughter, Mrs. A. W. Osborn, Jr., lives in Van Nuys.

Dr. McCarthy was a fine athlete and obtained his M in baseball at the University of Minnesota. Of great pride to him was the acquisition by his son, Lt. John R. McCarthy, in 1942 of the Navy Cross for extraordinary heroism in the battle of Coral Sea and at Mid-

Entrance Foyer

Saint Paul's Exclusive

CRESTVIEW
NEUROPSYCHIATRIC
HOSPITAL

New . . Modern . . Complete . .

Providing the highest standard of service at the lowest cost.

- **Occupational therapy and recreational department.**
- **Complete X-ray and laboratory.**
- **Electrocardiography—basal metabolism.**
- **Electroencephalography available.**
- **All patients rooms air-conditioned.**
- **Background music and psychotherapy sound equipment.**
- **Medically staffed by every neurologist and psychiatrist in Saint Paul.**
- **Especially trained nursing staff.**

MEMBER of the American Hospital Association
MEMBER of the Minnesota Hospital Association
APPROVED by the Minnesota State Medical Association
and the Ramsey County Medical Society.

CRESTVIEW HOSPITAL • 145 W. College Ave., St. Paul
GArfield 5841

A non-profit organization

way. He piloted a scout bomber in the Midway battle and after shooting down two Jap Zero planes, ran out of gas and had to bail out. He suffered a broken nose and a lacerated scalp but was picked up in his rubber raft. On the morning of December 7, 1941, he was flying toward Pearl Harbor in company with another plane piloted by Lt. Charles Dickinson when he was shot down and fractured his leg in bailing out. Fortunately he was rescued on this occasion also.

Besides being a member of the Ramsey County Medical Society, the Minnesota State Medical Association and the American Medical Association, Dr. McCarthy was a member of the Clinical Club of Saint Paul and the Staffs of St. Luke's and Miller Hospitals.

Dr. McCarthy had a wide circle of friends within and without the profession. His friendly manner and sociable qualities made him most popular with his many acquaintances.

Dr. McCarthy lost his wife several years ago but he is survived by his son and daughter.

EDWARD T. REEVE

Dr. Edward T. Reeve, a physician of Elbow Lake, Minnesota, since 1900, died June 5, 1953, at the age of eighty.

Dr. Reeve was born in Minneapolis June 17, 1872. In 1883 he moved with his parents to Buxton, North Dakota. He was graduated from Hamline Medical School in 1897. After interning at St. Mary's Hospital, Minneapolis, he took postgraduate work at the Polyclinic in New York and at the Chicago Postgraduate School.

He practiced at Parker's Prairie, Minnesota, from 1898 until 1900, and at Alexandria and Elbow Lake for short periods before locating at Elbow Lake in 1900.

Dr. Reeve was a member of the Park Region Medical Society, the Minnesota State Medical Association and the American Medical Association. He was honored in 1948 by the people in his community for his completion of fifty years of practice. He took an active interest in the affairs of his home town and was a member of the Civic and Commerce Association, the Lions, and Park Region lodge.

He is survived by his wife and two sons, Edward, and Charles, a student at the University.

Dr. Reeve was an able surgeon and physician and a man of energy and resolution, whose qualities won him the admiration and respect of those who knew him.

It is a matter of well authenticated experience that in both world wars, where large segments of the population of some countries usually offering adequate food supplies were insufficiently nourished, the incidence of and mortality from tuberculosis in such areas definitely increased. Possibly some of these patients suffered from primary infections, but no doubt in many of them reduced resistance led to reinfection or the reactivation of quiescent lesions. George Blumer, M.D., *Conn. State Med. J.*, May, 1952.

◆ Reports and Announcements ◆

SECOND INTERNATIONAL CONGRESS OF CARDIOLOGY

The Second International Congress of Cardiology will be held in Washington, D. C., September 12-15, 1954. It will be immediately followed by the Annual Scientific Sessions of the American Heart Association, September 16-18, 1954. The opening session will be held in the auditorium of Constitution Hall at 10:30 a.m. on Sunday, September 12, 1954, with addresses of welcome. A reception will be given at the Mayflower Hotel at 5:00 p.m. on the same day for all members of the Congress and their families. A banquet will be held September 15, 1954, at 7:30 p.m.

The Scientific Sessions lasting for three days will include formal papers, panel discussions, clinical pathological conferences and visits to important medical centers in Washington and Bethesda. The program will be printed in French, Spanish and English. Immediate translation of some of the papers and discussions will be made in three languages.

A series of Post-Congressional conferences and visits to at least twenty of the leading cardiac clinics in different parts of the U. S. and Canada has been arranged by special committees of local Heart Associations in the various cities.

INTERNATIONAL COLLEGE OF SURGEONS TO MEET IN NEW YORK IN SEPTEMBER

The Eighteenth Annual Congress of the United States and Canadian Sections of the International College of Surgeons will open at the Waldorf-Astoria in New York on Sunday evening, September 13, with a session open to the public on the "International Surgeons' Hall of Fame" with Dr. Richard H. Shryock, Director of the Institute of the History of Medicine of Johns Hopkins University, Baltimore, speaking on "Fame in Surgery." The scientific program will open on Monday morning, September 14, with a session on "Advances in the Treatment of Cancer," with Doctors Charles S. Cameron, of the American Cancer Society; Cornelius P. Rhoads, of the Sloan-Kettering Institute for Cancer Research; George N. Papanicolaou, of Cornell University Medical College; T. A. Watson, of Cancer Services for Saskatchewan; Komei Nakayama of Chiba (Japan) University Medical School, and George J. Papayannopoulos of Athens, Greece, among the speakers. Themes for the other general assemblies will include "Teamwork in Rehabilitation"; "Advances in the Treatment of Cardiopulmonary Diseases," "Advances in Thyroid Surgery," "Surgical Treatment of Intervertebral Disc Lesions," "Advances in Surgery of the Stomach and Intestines," "Advances in Surgical Treatment of Diseases of the Esophagus" and "Advances in Vascular Surgery."

Surgical specialties which will be represented by special sessions are the following: Colo-proctology, Neurosurgery, Obstetrics and Gynecology, Occupational Surgery, Ophthalmology, Orthopedic Surgery, Otolaryngology, Plastic Surgery, and Urologic Surgery. There will also be five sessions for Operating Room Nurses.

A Film Forum will be held on Monday evening; a Forum on Pharmacology in Surgery on Tuesday evening; the annual banquet on Wednesday evening; and the annual Convocation on Thursday evening. All of the sessions will be held at the Waldorf-Astoria except the Convocation which will be held in Carnegie Hall.

Dr. William R. Lovelace of Albuquerque, New Mexico, is President of the United States Section of the International College of Surgeons and Dr. Douglas U. McGregor of Hamilton, Ontario, is President of the Canadian Section. Dr. Horace E. Ayers of New York is General Chairman of the 1953 Congress and serving with him as co-chairmen are Doctors Henry M. Scheer of New York and Lyon H. Appleby of Vancouver, British Columbia.

INDUSTRIAL HEALTH INSTITUTE

The Institute of Industrial Health of the University of Cincinnati announces a course of instruction in *Occupational Skin Problems* to be presented jointly by the Division of Occupational Health of the Public Health Service, the Department of Preventive Medicine and Industrial Health, and the Department of Dermatology and Syphilology of the University of Cincinnati. It will be given during the week of October 12-16, 1953. The objective of this course is to give physicians a greater understanding of cutaneous problems of occupational origin.

The program will be divided into three daily sessions, consisting of morning lectures and clinical demonstrations, afternoon field instruction in industrial plants, and evening panel discussions. The didactic presentations will include a review of the anatomy, physiology and chemistry of the skin. Consideration will be given to the etiology, clinical appearance, diagnosis and treatment of occupational dermatoses. This will be supplemented by

(Continued on Page 774)

Ulmer
PHARMACAL COMPANY
1400 Harmon Place
Minneapolis 3, Minnesota

Send for new brochure M-753b
P-B-SAL-C with COLCHICINE "ULMER"
Effective Arthritic Therapy

THE SHELTERING ARMS

4330 River Road, Minneapolis 6, Minnesota

A HOSPITAL FOR TREATMENT OF POLIOMYELITIS

Acute and Convalescent

Fully Approved by American College of Surgeons
Modern treatment—Staff includes Kenny trained technicians

ACCIDENT • HOSPITAL • SICKNESS

INSURANCE

For Physicians, Surgeons, Dentists Exclusively

ALL PREMIUMS COME FROM — PHYSICIANS SURGEONS DENTISTS — ALL CLAIMS GO TO

$5,000 accidental death Quarterly $8.00 $25 weekly indemnity, accident and sickness	$15,000 accidental death Quarterly $24.00 $75 weekly indemnity, accident and sickness
$10,000 accidental death Quarterly $16.00 $50 weekly indemnity, accident and sickness	$20,000 accidental death Quarterly $32.00 $100 weekly indemnity, accident and sickness

COST HAS NEVER EXCEEDED AMOUNTS SHOWN

ALSO HOSPITAL INSURANCE

	Single	Double	Triple	Quadruple
60 days in Hospital	5.00 per day	10.00 per day	15.00 per day	20.00 per day
30 days of Nurse at Home	5.00 per day	10.00 per day	15.00 per day	20.00 per day
Laboratory Fees in Hospital	5.00	10.00	15.00	20.00
Operating Room in Hospital	10.00	20.00	30.00	40.00
Anesthetic in Hospital	10.00	20.00	30.00	40.00
X-Ray in Hospital	10.00	20.00	30.00	40.00
Medicines in Hospital	10.00	20.00	30.00	40.00
Ambulance to or from Hospital	10.00	20.00	30.00	40.00
COSTS (Quarterly)				
Adult	2.50	5.00	7.50	10.00
Child to age 19	1.50	3.00	4.50	6.00
Child over age 19	2.50	5.00	7.50	10.00

$4,000,000.00
INVESTED ASSETS

PHYSICIANS CASUALTY ASSOCIATION
PHYSICIANS HEALTH ASSOCIATION
51 years under the same management
400 First National Bank Building
Omaha 2, Nebraska

$19,500,000.00
PAID FOR CLAIMS

$200,000.00 deposited with State of Nebraska for protection of our members

COOPER CREME
TRADE MARK
The original vaginal creme
ACCEPTED COUNCIL ON PHARMACY AND CHEMISTRY
FORMULA
Trioxymethylene
A product of WHITTAKER LABORATORIES, Inc PEEKSKILL, N.Y.

For

BETTER Birth Control

Since 1934

No Finer Name in Contraceptives...

Active Ingredients
Trioxymethylene 0.04%
Sodium Oleate 0.67%

AT YOUR CONVENIENCE, DOCTOR . . .

you are cordially invited to visit our new and modern prescription pharmacy located on the street floor of the Foshay Tower, 100 South Ninth Street.

With our expanded facilities we will be able to increase and extend the service we have been privileged to perform for the medical profession over the past years.

Exclusive Prescription Pharmacy

Biologicals Pharmaceuticals Dressings
Surgical Instruments Rubber Sundries

JOSEPH E. DAHL CO.
(Two Locations)
100 South Ninth Street, LaSalle Medical Bldg.
ATlantic 5445 Minneapolis

(Continued from Page 772)

discussions of specific measures of prevention and control. The evening sessions, in panel form, have been designed to present current information on the subjects of cutaneous cancer, cutaneous allergy, and medico-legal problems.

Dr. Louis Schwartz, former Chief, Industrial Dermatoses Section, U. S. Public Health Service, will be the guest speaker at the one dinner meeting. He will describe his personal experiences with these problems during the past twenty-five years.

Physicians interested in attending the course should write for application blank to Secretary, Institute of Industrial Health, Kettering Laboratory, Eden and Bethesda Aves., Cincinnati 19, Ohio. A registration fee will be charged and early application is advised since attendance will be limited.

AMERICAN COLLEGE OF SURGEONS

The Thirty-ninth Annual Clinical Congress of The American College of Surgeons will be held in Chicago, October 5-9, 1953.

The program will include scientific papers, panel discussions, symposia, surgical forums, medical motion pictures, color television, and exhibits. Headquarters will be the Conrad Hilton Hotel.

Dr. Harold L. Foss, president of The College for 1953, will preside at the opening evening session at which Dr. Fred W. Rankin, Lexington, Kentucky, will be installed as president for the year 1954. Dr. James Paterson Ross, of London, will give the Eighth Martin Memorial Lecture entitled "Science and Surgery."

UNIVERSITY HOSPITALS OPEN MULTIPLE SCLEROSIS CLINIC

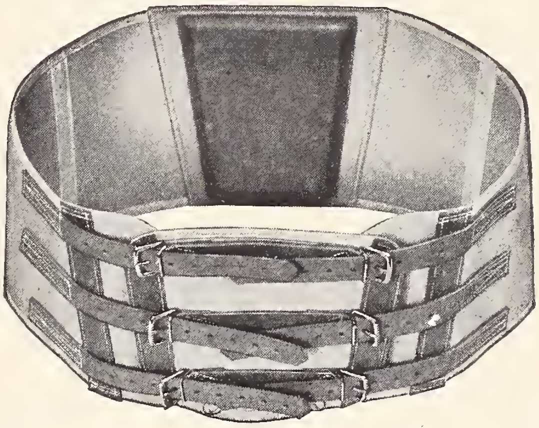
A new clinic for diagnosis of a "mystery" disease which affects from six to eight thousand Minnesota citizens opened July 1 at University of Minnesota hospitals.

The disease—multiple sclerosis—is a puzzle. It usually strikes suddenly at any part of the nervous system. Symptoms vary, making it extremely hard to diagnose. In one person, it may cause double vision, in another, weakness of the arm or leg. Nobody knows what the cause is.

Most often multiple sclerosis hits young adults between eighteen and thirty-five. Attacks of the disease are generally temporary, but they recur from time to time. Dr. Abe B. Baker, head of the neurology division in University hospitals, the man who will direct the new clinic, points out that multiple sclerosis is not usually a fatal disease and in most cases causes only passing disabilities rather than complete invalidism of the patient.

"Our hope," Dr. Baker says, "in establishing this clinic is to make an accurate and early diagnosis of the disease. Multiple sclerosis is the hardest diagnosis in neurology. Because it's such an imposter, often resembling other diseases of the nervous system, it's even difficult for a specialist to detect."

The clinic—set up as a service rather than as a research center—will be in charge of Dr. Charles Van Buskirk, assistant professor of neurology. In addition



Popular Type SACRO-ILIAC BELT

This high-grade sacro-iliac support is made of orthopedic webbing, 6 inches wide, well reinforced and supplied with perineal straps.

To determine size needed, take measurements around hip, 3 inches below the iliac crest. Stock sizes 30 to 44. Extra sizes available on special order.

Professional Price $5.95

Abdominal Supporters *Elastic Stockings* *Trusses*

C. F. ANDERSON CO., INC.

Surgical and Hospital Equipment

ATlantic 6508, ZEnith 2055 901 Marquette Ave.

MINNEAPOLIS 2, MINNESOTA

to diagnosis, prescription of treatment and periodical check-ups, the center will also try out new treatments and diagnosis methods. It will use all facilities available at University hospitals.

The 1953 Minnesota legislature appropriated $10,000 a year for this year and next to the Minnesota chapter of the National Multiple Sclerosis society for establishment of the clinic. Mrs. Gordon Butler, Duluth, is chairman of the state group.

POSTGRADUATE ASSEMBLY IN ENDOCRINOLOGY AND METABOLISM

The Endocrine Society and the University of Minnesota announce a Postgraduate Assembly in Endocrinology and Metabolism for Physicians, the Sixth Annual Assembly sponsored by The Endocrine Society, which will be presented on the University of Minnesota campus from September 28 to October 3, 1953. Lectures will be held in the Museum of Natural History Auditorium, while the facilities of the immediately adjacent Center for Continuation Study will be available for demonstrations and for the accommodation of registrants for the course.

All aspects of clinical endocrinology and metabolism will be taken up, and recent important advances in the field will be stressed. Informative demonstrations and illustrative clinical cases will be presented, and ten panel discussions will provide registrants with opportunities to bring up special problems and questions. Each registrant will receive a booklet containing abstracts of all lectures.

Faculty for the Assembly includes outstanding authorities in the field of endocrinology from various parts of the country as well as members of the faculty of the University of Minnesota Medical School and the Mayo Foundation. The program will be presented under the direction of Dr. Edward C. Reifenstein, Jr., General Chairman for The Endocrine Society, and Dr. C. J. Watson, Professor and Head, Department of Medicine. Chairman of Local Arrangements on behalf of The Endocrine Society is Dr. Edmund B. Flink.

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

(Continued from Page 757)

performed on herself by Dr. Schmidt. Mrs. Dinsmore was placed on probation for three years.

The records of the Minnesota State Board of Medical Examiners show that Dr. Schmidt was born at Montrose, Minnesota, on May 20, 1881, and graduated from Hamline Medical School in 1908. Dr. Schmidt was licensed to practice in Minnesota in 1908. Dr. Schmidt appeared before the Minnesota State Board of Medical Examiners on May 22, 1953, in response to a citation requiring him to show cause why his medical license should not be suspended or revoked. The matter was taken under consideration and the action of the Medical Board will be announced at a later date.

◆ Of General Interest ◆

Dr. William F. Braasch, retired staff member of the Mayo Foundation and Mayo Clinic, was named chairman of the national campaign for the Greater University Fund drive of 1953. The drive got under way in May, with a goal of $130,000.

* * *

Dr. Lyle Benson, of Tracy, left in June to practice at Springfield, Oregon. **Dr. Norman Lee** and **Dr. W. G. Workman,** with whom Dr. Benson had been associated, will continue to operate the local clinic without the addition of a new doctor for a time.

* * *

Dr. L. J. Hoyer, of Windom, was named chief of staff of the Windom Hospital, and **Dr. L. Sogge,** secretary, at the meeting held May 13 to elect officers for the coming year. The Windom Hospital staff includes all of the Windom doctors and **Dr. Robert R. Sawtell,** of Jeffers.

* * *

Dr. John K. Grotting, Minneapolis, has opened a new office at 948 Medical Arts Building, Minneapolis, for the practice of plastic and reconstruction surgery.

* * *

Dr. Walter S. Neff, staff member of the Lenont Peterson Clinic in Virginia, was elected May 19, to three years as one of the Directors of Independent School District No. 22.

* * *

Dr. William Sawyer Eisenstadt, of Minneapolis, addressed the Southeastern Section of the American Academy of General Practice, May 26, at Lake City Dr. Eisentadt's topic was "The Management of Status Asthmaticus."

* * *

Dr. E. F. Beyer, of Braham, who recently left to serve with the Army Medical Corps, was honored by the Braham community May 11, at a smorgasboard. Dr. Beyer left May 26, to report to Brook Army Medical Center at Fort Sam Houston, San Antonio, Texas. **Dr. W. T. Nygren,** with whom Dr. Beyer was associated, will practice alone for several months until a young doctor from Duluth joins him.

* * *

Dr. J. Y. Feinstein, Minneapolis, spoke at the "60-Over Club" held at the Minneapolis Public Library, May 22. Dr. Feinstein's topic "Guard Your Health," included the showing of a film.

* * *

Dr. Victor Johnson, of Rochester, was named a member of the committee on medical education and hospitals until 1958, at the annual election of the American Medical Association, held June 4, in New York, New York.

* * *

Twenty ex-presidents of the Minnesota State Medical Association were honored at the Association's annual meeting held May 17, 18, and 19. The honored physicians were: **Drs. W. F. Braasch,** Rochester, president in 1927; **S. H. Boyer,** Duluth, 1930; **L. L. Sogge, Windom,** 1931; **M. S. Henderson,** Rochester, 1932; **N. O. Pearce,** Minneapolis, 1933; **F. J. Savage,** Saint Paul, 1934.

Also **Drs. W. W. Will,** Bertha, 1935; **J. M. Hayes,** Minneapolis, 1938; **George A. Earl,** Saint Paul, 1939; **B. S. Adams,** Hibbing, 1940; **H. Z. Griffin,** Rochester, 1942; **S. H. Baxter,** Minneapolis, 1943; **W. Mendelssohn Jones,** Saint Paul, 1944.

Also **Drs. E. L. Touhy,** Duluth, 1945; **Edwin J. Simons,** Saint Paul, 1946; **Louis A. Buie,** Rochester, 1947; **E. M. Hammes,** Saint Paul, 1949; **E. J. Elias,** Duluth, 1950; **J. F. Norman,** Crookston, 1951, and **R. L. J. Kennedy,** Rochester, 1952.

* * *

Dr. F. Donald Bucher, of Starbuck, was called to active duty with the U. S. Navy, in June. Dr. Bucher, who has practiced in the Starbuck community since July 1949, reported to Norfolk, Virginia, June 8.

* * *

Dr. Walton Lillehei, associate professor of the Department of Surgery, University of Minnesota Medical School, was the featured speaker at the meeting of the Southwestern Minnesota Medical Society and Auxiliary, held May 11, at Ehlers Steak House in Worthington. Dr. Lillehei's topic was "Considerations in the Diagnosis and Surgical Treatment of Heart Disease."

* * *

Dr. C. S. Donaldson, of Foley, was presented with a plaque by James Tillet at a testimonial dinner given in honor of the doctor, May 7. Tillet was the first of over 2 000 babies delivered by Dr. Donaldson in his twenty-six years of service in the community.

* * *

Dr. C. O. Lindberg, formerly of Grantsburg, Wisconsin, joined the Federal Hospital at Sandstone in May.

* * *

Dr. Robert D. Letson, of Minneapolis, became engaged to Patricia Andersen also of Minneapolis, in May. Dr. Letson was graduated from the University of Minnesota Medical School and is completing his internship at Minneapolis General Hospital.

* * *

Capt. Francis L. Stutzman (MC), Newport, recently a staff surgeon at the Minneapolis Veterans Administration Hospital, arrived in Germany in May where he has been assigned as chief surgeon for the Port U. S. Army Hospital.

* * *

Dr. J. G. W. Havens, and **Dr. Garfield E. Hertel,** of Austin, and **Dr. George R. Melzer,** of Lyle, were granted life memberships in the Minnesota State

(Continued on Page 778)

ABOUT MUNICIPAL BONDS

Investors who have purchased Municipal Natural Gas Revenue Bonds and have been enjoying generous "Tax-exempt" income from their investments are familiar with the progress and operating results of their systems. Those who have adopted a "wait and see" attitude concerning gas revenue bonds might be interested in some results.

ATMORE ALABAMA issued $325,000 bonds in 1946, completed the first year of operation in 1948. By the *second* year net income was equal to the average annual amount necessary to pay bonds and interest and income is now more than *twice* that amount. An estimated 418 customers would keep the system on a paying basis —there were 1078 users last December.

BREWTON ALABAMA issued $530,000 bonds simultaneously with Atmore, is also now earning more than *twice* the annual amount necessary to cover bond and interest payments.

TALLASSEE ALABAMA issued $355,000 bonds in 1948, completed its first year in 1949. The number of customers is already *three* times the minimum estimated number and last year's income was almost *three* times the annual amount necessary to pay bonds and interest.

PLEASANT GROVE ALABAMA issued $700,000 bonds in 1948, completed its first year in 1950. It is running far ahead of minimums and has retired $25,000 bonds in advance of maturity by calling them in at the call price ($1,040 each).

DICKSON TENNESSEE issued $385,000 bonds in 1949, completed its first year in 1951. In its second year the system had net revenues well in excess of the average amount necessary to pay bonds and interest each year.

MONROE GEORGIA issued $345,000 bonds in 1951, will not complete its first fiscal year until December, 1953. Net earnings for eleven months, however, are reported equal to the average annual amount of bond and interest payments.

MENA ARKANSAS issued $1,423,000 bonds in 1951 and the system was completed officially in February, 1953. By April there were almost as many gas users as the minimum number required to meet all payments over the life of the bonds.

THE DEKALB-CHEROKEE COUNTIES GAS DISTRICT ALABAMA issued $2,100,000 bonds this spring and the system is now under construction, The engineer estimated 1877 gas users would provide sufficient income to meet minimum payments and the District has now received applications for service from more than 2,175 potential customers.

We have recently purchased a new issue of $610,000 Cochran, Georgia, Natural Gas Revenue Certificates to provide natural gas to the City and the surrounding area—an estimated population of 5,800.

Cochran is the county seat and largest community in Bleckley County; the City enjoyed a population growth of 48% from 1940 to 1950. The City has received over 600 applications for service, each accompanied with a $5 deposit. The engineer estimates that only 550 are required to pay bonds and interest as they mature.

THESE BONDS ARE CURRENTLY AVAILABLE TO RETURN FROM 4.00% to 4.50 %.

This return or income is exempt from present Federal Income Taxes. We suggest you write or call for specific maturities available.

JURAN & MOODY

MUNICIPAL SECURITIES EXCLUSIVELY

TELEPHONES:
GArfield 9661
PRior 6423

93 E. SIXTH STREET
ST. PAUL 1, MINNESOTA

HELP FOR
PROBLEM DRINKERS

Hazelden Foundation (non-profit) is dedicated to the treatment of problem drinking through research, education, and rehabilitation. It has ideal facilities on Lake Chisago near Center City, Minn. Your inspection is invited at any time.

HAZELDEN FOUNDATION

Let us send you complete information

A NON-PROFIT ORGANIZATION

2639 University Avenue **St. Paul 14, Minnesota**
24-hour service **Phone NEstor 5958**

SERVICE BROWN & DAY INC SAINT PAUL U.S.A. QUALITY

For

Professional Supplies

and

Service

BROWN & DAY, INC.

St. Paul 1, Minnesota

(Continued from Page 776)

Medical Association, having completed at least forty years in medical practice and having attained the age of seventy or older.

Dr. Harold J. Anderson, president of the Mower County Medical Society, presented the three doctors with their life certificates at a banquet held in their honor, May 13. Three Rochester doctors who took part in the ceremony were: **Dr. John Waugh,** district representative of the State association; **Dr. John Stickney,** who will soon become district representative, and **Dr. R. L. Kennedy,** past president of the County Society.

Local fellow physicians spoke, giving summary biographies of the three honored doctors. **Dr. Paul Leck,** of Austin, for Dr. Hertel; **Dr. P. A. Lommen,** Austin, for Dr. Havens, and **Dr. Conrad B. Frydenlund,** Lyle, for Dr. Melzer.

* * *

Recipients of Special Hospital Awards presented at the 100th Anniversary dinner of St. Joseph's Hospital were: **Dr. George E. Sherwood,** Kimball, who interned at St. Joseph's Hospital from 1893 to 1894; **Dr. James C. Ferguson,** Saint Paul, who served fifty years on the hospital staff; **Dr. F. C. Schuldt,** Saint Paul, forty-two years on the staff, and **Dr. E. C. Eshelby,** Saint Paul, sixty years of service on the hospital staff. **Dr. L. A. Nelson,** Saint Paul, unable to attend in person, also received a special service award.

* * *

Mrs. Henry W. Quist, Sr., of Minneapolis, took office May 19, as the new president of the women's auxiliary to the Minnesota State Medical Association, succeeding **Mrs. C. L. Sheedy** of Austin. **Mrs. P. S. Rudie,** Duluth, was named president-elect to follow Mrs. Quist in 1954. Other officers named were: **Mrs. C. L. Oppegard,** Crookston; **Mrs. Andrew Christianson,** Saint Paul, and **Mrs. L. P. Howell,** Rochester, vice presidents; **Mrs. David Halpern,** Brewster, recording secretary; **Mrs. C. W. Froats,** Saint Paul, treasurer, and **Mrs. J. K. Butler,** Cloquet, auditor.

* * *

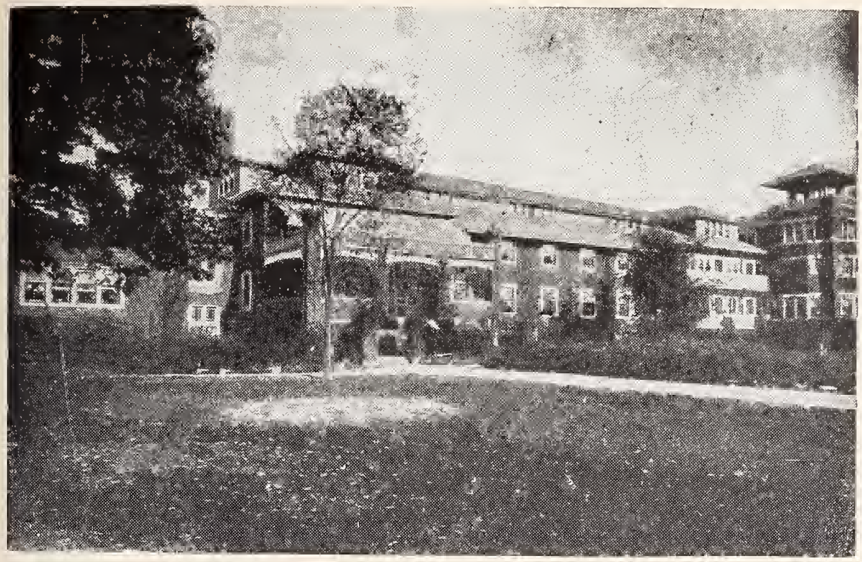
Dr. G. V. H. Kleifgen, of Park Rapids, closed his office June 15, to leave for duty with the Army Medical Corps.

* * *

Dr. Randall G Sprague, of the Mayo Clinic, was elected president of the American Diabetes Association, in New York, June 4.

* * *

A random selection of family doctors—**Dr. E. E. Dady,** Minneapolis; **Dr. Frank Naegeli,** Fergus Falls; **Dr. R. E. Flynn,** La Crosse, Wisconsin; **Dr. T. J. Jensen,** Duluth; **Dr. L. L. Sogge,** Windom, and **Dr. Johannes C. Jacobs,** Willmar—interviewed as they visited exhibits at the 100th annual meeting of the Minnesota State Medical Association, all said that they would choose the same profession if they had it all to do over again—even with their week



North Shore Health Resort

Winnetka, Illinois

on the Shores of Lake Michigan

A completely equipped sanitarium for the care of **nervous and mental disorders, alcoholism and drug addiction** offering all forms of treatment, including electric shock.

SAMUEL LIEBMAN, M.S., M.D.

225 Sheridan Road **Medical Director** **Phone Winnetka 6-0211**

running to seventy hours, any time of the day or night.

* * *

Winners of first place awards in the Physicians Art and Hobby show on display at the 100th annual meeting of the Minnesota State Medical Association were: **Dr. J. P. Wendland,** Minneapolis, photography; **Dr. Daniel deGallier,** Minneapolis, water color; **Dr. Harold Rothschild,** Saint Paul, drawing; **Dr. James Benepe,** Saint Paul, oils; **Dr. James Berens,** Rochester, handicraft; **Dr. Robert Wilder,** Minneapolis, sculpture, and **Dr. Alex Ratelle,** Saint Paul, popular vote of convention visitors for his "Portrait of a Lady."

* * *

Dr. John L. Emmett, of the Mayo Clinic, spoke at the Upper Peninsula Medical Society (Michigan) meeting, held June 19 and 20, in Escanaba, Michigan.

* * *

Dr. Bernard Zimmermann, University of Minnesta Medical School cancer co-ordinator, has been awarded a three-year grant for study, by the American Cancer Society. The grant totalling $18,000, will permit Dr. Zimmermann to carry out research under the direction of **Dr. Owen H. Wangensteen,** head of the department of surgery, University of Minnesota Medical School.

Dr. Zimmermann will conduct studies of the endocrine physiology and metabolic balance in relationship to clinical cancer and cancer surgery.

Dr. Bryson McHardy joined **Dr. R. B. Skogerboe** on the Karlstad Hospital staff, July 1. Dr. McHardy replaces **Dr. Robert Hines** who left the community to return to school and the study of internal medicine.

* * *

Speakers on the program at the Olmsted-Houston-Fillmore-Dodge County Medical Society meeting, held May 6, in Rochester, included **Dr. D. T. Carr,** speaking on "Prognosis in Sarcoidosis;" **Dr. O. E. Hallberg,** "Points to Remember When Treating Severe Epistaxis," and **Dr. J. M. Waugh,** "The 1953 Budget of the Minnesota State Medical Association."

* * *

Drs. A. B. Baker, Donald W. Hastings, William Schofield, Conrad I. Karleen, Lawrence R. Boies, Sidney K. Shapiro, Harry B. Hall, Edward T. Evans, Joseph A. Resch, and **Frederic J. Kottke,** were guests of the Minnesota Chapter, National Association of Claimants' Compensation Attorneys, at a dinner meeting, held May 23, in Minneapolis. The physicians answered questions concerning medical aspects of injuries which are frequent subjects of litigation.

* * *

Dr. Robert T. Patrick, of the Mayo Clinic, spoke to the anesthesia group at the national convention of the Catholic Hospital Association and the meetings of nine associated groups May 23 to May 28, in Kansas City, Missouri. Dr. Patrick's topic was "The Post Anethesia Observation Room."

Dr. A. P. Goblirsch, of Sleepy Eye, was elected president of the Redwood County Community Chest,

The Birches Sanitarium, Inc.

2391 Woodland Avenue
Duluth 3, Minnesota

A hospital for the care and treatment of Nervous and Mental disorders. Quiet, cheerful environment. Specially trained personnel. Recreational and occupational therapy.

Dr. L. R. Gowan, M.D., M.S., Medical Director

at the meeting held May 14, at Wabasso, to elect officers and make campaign plans for the fall drive.

* * *

The first annual B. B. Vincent Lyon Award for the best paper presented at the meeting of the American Gastroenterological Association by an associate member, was given to **Drs. W. H. Dearing Jr., F. R. Heilman,** and **W. G. Sauer,** all of Rochester. Their paper was entitled "Micrococcic (Staphylococcic) Enteritis Following the Use of Aureomycin or Terramycin," and was presented by Dr. Sauer at the meeting of the Association held early in May at Atlantic City.

* * *

Dr. Maxwell M. Barr, Minneapolis, was elected medical director of the Hennepin County League for Planned Parenthood, May 19. He succeeds **Dr. C. J. Ehrenberg,** who retired after fourteen years as medical director of the planned parenthood group.

* * *

Dr. Henry B. Blumberg, of Fairmont, was appointed chairman of the Fairmont Youth Activities Assembly Health Committee, May 21. Dr. Blumberg's duties center around local health promotion based on the Youth Conservation Commission report and suggestions made to his committee.

* * *

Dr. Richard O. Juliar closed his office in St. Clair early in June, after fifty years of practice in the community. Living in the St. Clair community as a child, Dr. Juliar attended country school and was graduated from Mankato High School in 1896. He was graduated from the University of Minnesota Medical School in 1903. Dr. Juliar practiced ten years in the northern Minnesota communities of Mahnomen and Middle River before again settling in St. Clair in 1913. Dr. Juliar left June 10, for Los Angeles, California, where he and his wife will make their home.

The St. Clair community is now without a physician.

* * *

Physicians from the Mayo Clinic cited for their exhibit on diseases of the mitral value at the American Medical Association convention in New York, New York, June 1-5, were **Drs. T. J Dry, R. L. Parker, J. E. Edwards, J. W. Kirklin, R. D. Pruitt, G. W. Daugherty, C. H. Schiefley, A. J. Bruwer, R. G. Tompkins,** and **A. H. Bulbulian.**

* * *

Dr. William Halme, of Wadena, left for active duty wiith the Army Medical Corps reporting to Brooks Hospital, San Antonio, Texas, May 25.

* * *

Dr. James W. Halvorson, of Goodhue, who has practiced in the Goodhue community since July,

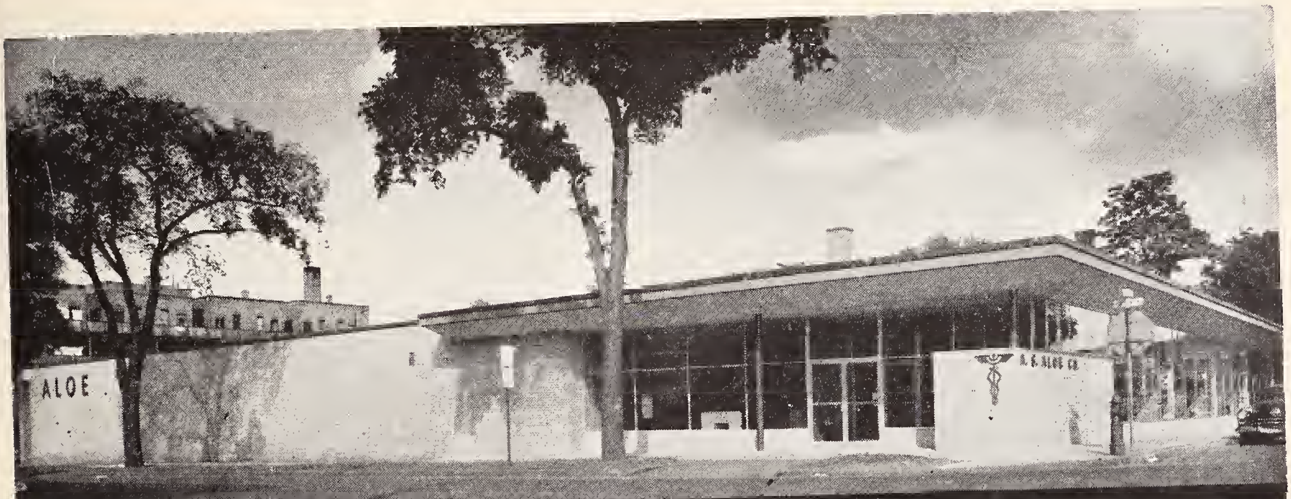
HOMEWOOD HOSPITAL is one of the Northwest's outstanding hospitals for the treatment of Nervous Disorders—equipped with all the essentials for rendering high-grade service to patient and physician.

Operated in Connection with
Glenwood Hills Hospitals

HOMEWOOD HOSPITAL
Corner Penn and Plymouth Avenues North
Minneapolis Minnesota

. . . now conveniently located for faster service

You need no longer risk driving through congested traffic to examine new equipment. In this new, modern store you will find complete stocks of instruments and supplies for the physician; model displays of hospital equipment of every type; and a comprehensive range of equipment, apparatus and supplies for the modern medical laboratory. We cordially invite you to visit us at your convenience, or call us for prompt emergency service. Free parking is provided adjacent to building. Telephone: LIncoln 7601.



a. s. aloe company OF MINNESOTA • 927 Portland Ave. • Minneapolis 4, Minn.

1950, was recalled to active duty with the United States Navy in June.

Dr. James De Geest, recently graduated from the University of Minnesota Medical School, took over Dr. Halvorson's practice, July 6. Dr. De Geest completed his intership at Minneapolis General Hospital. During World War II, he served in the Navy Air Corps at Alameda, California, and at Okinawa. He was discharged in 1947.

* * *

Dr. Bela Gallo, recently licensed in the State of Minnesota, began practice at Lake Bronson in June.

* * *

Dr. Herman E. Hilleboe, former chief of the Tuberculosis and Crippled Children's programs of the State of Minnesota, was granted an honorary degree from the University of Rochester, New York, May 31. Dr. Hilleboe is at present, commissioner of health of the New York State Public Health Department.

* * *

Dr. Harry H. Larson, who recently completed his intership at St. Luke's Hospital, Duluth, joined the Northland Clinic at Rice Lake, Wisconsin, July 1.

* * *

Dr. V. P. Hauser, of Saint Paul, won the Ramsey County Medical Assembly and Forum golf tournament, June 3, held at the White Bear Yacht Club, with a score of eighty. **Dr. W. F. Hartfiel** and **Dr. P. F. Donohue**, Saint Paul, tied with eighty-one's. and **Dr. A. E. Venables** finished with an eighty-two.

* * *

Dr. Edgar E. Heller, of Mankato, was presented with an award May 18, for meritorious service in Korea, before the students of the Command and General Staff School of Mankato, which is affiliated with the 5951 USAR School. The citation reads, in part, ". . . As commanding officer and medical officer of three widely separated medical detachments, Lieutenant Heller traveled many miles over rough terrain to carry out his assignment in the most effective possible manner. Untrained in Army administrative routine, he nevertheless devised methods which enabled him to supervise the operation of the three detachments with great efficiency . . ."

Dr. Heller is associated in practice with **Dr. R. W. Kearney** in Mankato.

* * *

Dr. G. L. Barnett, who practiced in the Graceville area for the past five years, left in May for active military duty. Dr. Barnett reported to Fort Sam Houston, San Antonio, Texas, for an indoctrination course in the Army Medical Corps.

* * *

Dr. William T. McKenna, of Austin, presented a scientific paper entitled, "The Significance of the

COSMETIC *HAY FEVER?*
Prescribe UNSCENTED AR-EX Cosmetics
When perfumes or scented cosmetics cause allergic reactions — prescribe UNSCENTED AR-EX COSMETICS. Clinically tested to meet your high standards. Smart, fashion-right for patient acceptance. All needed beauty aids. Send for free Formulary
UNSCENTED
AR-EX COSMETICS, INC., 1036 W. VAN BUREN ST., CHICAGO 7, ILL.
AR-EX
HYPO-ALLERGENIC
Cosmetics
Clinically tested on allergic patients for use by allergic patients

Pulmonary Arterial Wedge Pressure," at a meeting of the Minnesota Society of Internal Medicine, held at the University of Minnesota, May 23.

* * *

Dr. Albert Fritsche, of New Ulm, spoke on "Medical Guidance of Parents Education Program," at a Parent Education conference sponsored by the State Public Health Nursing Service, held at the Center for Continuation Study at the University of Minnesota, May 22 and 23.

* * *

Dr. Dean S. Fleming, director of the state division of disease prevention and control, State Health Department, and **Dr. Willis E. Dugan,** State March of Dimes chairman, were guest speakers at a meeting of Minnesota women, sponsored by the National Foundation for Infantile Paralysis, June 4, in Minneapolis. One of the objectives of the conference was to provide foundation leaders and committee chairmen with data for use in the event of a polio outbreak.

* * *

Dr. James Dokken, having recently completed his internship at Mt. Sinai Hospital, Minneapolis, began practice in Windom, July 1.

* * *

Dr. Richard Henry Troup, of Rochester, was married to Mary Ann Grottum, of Jackson, May 23, at the Rochester Congregational Church. Dr. Troup is the son of Dr. and Mrs. Ralph L. Troup, of Green Bay, Wisconsin, Mrs. Troup, the daughter of State Senator and Mrs. B. E. Grottum, of Jackson. Thomas J. Troup of Des Plains, Illinois, attended his brother as best man; **Dr. John Kelley,** and **Dr. Joseph Grace,** both of Rochester, were ushers.

* * *

An outline of the activities and problems of the Austin Public Health Department was presented by **Dr. T. M. Seery** at the meeting of the Business and Professional Women's Club, held May 19, in the Episcopal Church in Austin.

* * *

Dr. T. B. Magath, of Rochester, was presented with the Award of Merit by Millikin University, Decatur, Illinois, at its annual commencement, May 25, in recongnition of his position in the field of medicine. Dr. Magath received his master's degree at Millikin University.

* * *

Dr. David Feigal, of Wayzata, was called to active duty with the U. S. Air Force and reported to Montgomery, Alabama, June 29, for an indoctrination course. Dr. Feigal has been practicing with **Dr. W. W. Rieke,** in Wayzata, since 1949.

* * *

Winning awards for exhibits presented at the meeting of the American Urological Association held recently in St. Louis, Missouri, were: **Dr. O. S. Culp** and **Dr. H. De Weerd,** of Rochester, first place for new procedures and apparatus with their exhibit, "A Pelvic Flap Operation for Certain Types of Ureteropelvic Obstruction," and **Drs. K. G. Wakim, M. A. Block, F. C. Mann,** and **W. A. Bennett,** all of Rochester, first place for laboratory research with their exhibit, "Pathogenesis of Acute Renal Insufficiency."

* * *

Dr. Lyle Hay, University of Minnesota and Veterans Hospital, Ft. Snelling, staff, and **Dr. David H. Eisenstadt,** also of the University staff, presented scientific papers at the meeting of the Southeastern Minnesota Academy of General Practitioners, held May 26, in Lake City. "Varicose Veins," was the topic of the paper given by Dr. Hay, and "Acute Asthma," by Dr. Eisenstadt.

* * *

Dr. B. J. Hughes, formerly with the Veterans Hospital, Ft. Snelling, opened an office for private practice in Brainerd, the end of May.

* * *

Dr. James Nixon, Lieutenant, U. S. Naval Reserve, of Crosby, left for active military service in June. Lt. Nixon reported to the Naval Supply Depot, San Diego, California, June 30.

* * *

Physicians from Minneapolis who moved into the Dakota-Lake Medical Building in St. Louis Park in June were **Dr. Maxwell M. Barr,** Obstetrics and gynecology; **Dr. Norman B. Bloom,** surgery; **Dr. Earl Hill,** medicine, and **Dr. Ellis Ellison,** ear, nose and throat. **Dr. M. E. Craig,** pediatrician, has had her office in the building for some time.

PATTERSON SURGICAL SUPPLY COMPANY
130 W. Seventh Street, St. Paul 2, Minn.
HOSPITAL AND PHYSICIANS SUPPLIES AND EQUIPMENT
Cedar 1781-82-83

Dr. I. G. Wiltrout, of Oslo, was presented with a new car, to show appreciation for the services and work he has done for the Oslo Legion and the people of the community, at the Memorial Day services held in the Oslo Legion Hall, May 30.

* * *

Dr. Glenn P. Schmitz, of Little Falls moved into his new eighteen-room Broadway Clinic building on East Broadway in Little Falls, early in June.

* * *

Dr. M. E. Knapp, of Minneapolis, gave the last in a series of medical lectures sponsored by the Veterans Administration in Billings, Montana. Dr. Knapp's address was given June 12, and he spoke on "Physical Medicine and Rehabilitation as Applied in General Medicine."

* * *

Dr. Paul G. Quie, of Northfield, who was graduated from the Yale School of Medicine, New Haven, Connecticut, June 8, was awarded the Miriam K. Dasey award, given each year to the graduating student who "shows promise of fulfilling the idea of a compassionate physician."

* * *

Dr. Robert G. Hinckley, Associate Professor of Psychiatry and Senior Psychiatrist, University of Minnesota Mental Hygiene Clinic for students, was one of the guest lecturers at the Veterans Administration Conference of Chiefs of Professional Services held at Downey, Illinois, June 24 through 26, 1953. Dr. Hinckley's lecture, given on June 24, was entitled "Group Psychotherapy with Chronic Psychiatric Patients."

* * *

Dr. J. Gordon Beaton, of Northfield, gave a "Classification" talk to the members of the Northfield Rotary Club, May 28. Dr. Beaton, a specialist in internal medicine, explained the various study and training requirements for a medical degree and advanced degrees in the specialties.

* * *

Dr. John H. O'Leary, associated with the Starekow Clinic in Thief River Falls for the past three years, left June 15, to join a clinic in Havre, Montana.

* * *

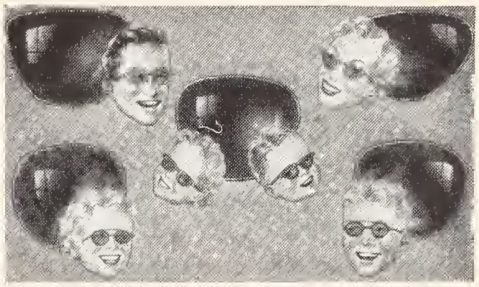
Dr. Claude R. Hitchcock, director of the cancer detection center at the University of Minnesota, addressed the physicians of Morris and surrounding area, June 10, at the second West Central Minnesota seminar.

* * *

Dr. Louis L. Freidman, of Saint Paul, participated in the First World Congress of Sterility and Infertility, held in New York, New York, May 25 through 31, 1953. Dr. Freidman presented a paper entitled, "Pregnancies Following Timing Ovulation with Insemination."

* * *

Dr. Richard V. Ebert, professor of Medicine, University of Minnesota, will leave September 1 to become professor of medicine at Northwestern University and chief of medicine at the Veterans Research Hospital in Chicago.



for every patient . . .

comfort *with certified*

PRESCRIPTION SUN GLASSES

Their eyes need the extra comfort that a pair of scientifically produced prescription sun glasses affords.

Summer or winter, you will extend your patients a service when you suggest an extra pair of glasses that will give them maximum glare protection without affecting true color values.

Your Benson Optical Supply House is well supplied to give you prompt and satisfactory service in this important item.

Benson
OPTICAL COMPANY

EXECUTIVE OFFICES
MINNEAPOLIS, MINN.

SINCE 1913

COMPLETE LABORATORIES IN PRINCIPAL CITIES
OF UPPER MIDWEST

* * *

Dr. Carleton B. Chapman, associate professor of medicine, University of Minnessota, left early in July to become a professor of medicine at Southwestern University Medical School at Dallas, Texas. Dean at Southwestern is Dr. N. George Aagaart, former director of continuation of medical education at the University of Minnesota.

* * *

Dr. C. W. Mayo, of Rochester, presented awards and scholarships at the St. Mary's School of Nursing graduation, held June 7, in the St. Mary's Hospital auditorium.

* * *

Dr. Thomas Smersh, of Minneapolis, is assuming the practice of **Dr. F. Paul Kortsch,** of Prior Lake, during the latter's convalescence. Dr. Kortsch is in St. Barnabas Hospital, Minneapolis, after suffering a heart attack late in May.

* * *

Dr. R. F. Pierson, of Slayton, attended the Cook County Graduate School of Medicine during the week of June 15.

* * *

Dr. Stephen M. Brzica, of Worthington, left his practice there to become associated with Dr. Robert Quinn in the Sioux Falls Clinic, Sioux Falls, June 10.

* * *

Dr. George Van Rooy was named president of the medical staff of Northwestern Hospital at Thief River Falls, at the regular meeting held June 8.

He succeeds **Dr. John O'Leary. Dr. Theodor Bratrud** was named vice-president, and **Dr. William Feigal,** secretary-treasurer.

* * *

Dr. Barbara Anne Burke, of Minneapolis, who recently graduated from Women's Medical College of Pennsylvania, Philadelphia, received the Albert Einstein Medical Center award for having the highest scholastic average in the graduating class over a four-year period. Dr. Burke is interning at Philadelphia General Hospital.

* * *

Dr. Victor Johnson, of Rochester, director of the Mayo Foundation, has been named a member of the American Medical Association's committee on medical education and hospitals. Dr. Johnson was named to the committee, June 4, at the annual election of the American Medical Association, held during the 1953 convention in New York, New York.

* * *

Dr. Miland E. Knapp, chief of physical medicine and in charge of training and treatment at the Kenny Institute, presented certificates to eleven physical therapists, June 9, at the Elizabeth Kenny Institute graduation exercises held at Westminster Presbyterian Church.

* * *

An award of merit from the Minnesota Heart Association was presented June 2, to **Dr. and Mrs. B. J. Cronwell,** of Austin, by the organization's executive secretary. The citation was in recognition of their "public spirit in working for reduction of the ravages of heart disease." Others who received the merit awards from the Heart Association are **Dr. and Mrs. Herman Miller,** Grand Meadow; and **Dr. C. B. Frydenlund, Lyle.**

* * *

Dr. Albert I. Balmer, of Pipestone, left his practice to begin a residency in radiology at the Charles T. Miller Hospital, Saint Paul, July 1. **Dr. Russell J. Kotval,** who has practiced in Pipestone since 1948, took Dr. Balmer's place in practice with **Dr. C. A. Williams.**

* * *

An award for "distinguished service in medicine" was presented by the alumni association of the University of Kansas, to **Dr. Elwood A. Sharp,** director of clinical investigation for Parke Davis and Company. Dr. Sharp developed Ventriculin for the specific treatment of pernicious anemia and played an important role in the development of other medicines, including Antruitrin and Thielin.

On June 1, 1953, **Dr. Lillian L. Nye,** of Saint Paul, was presented a Certificate of Merit from the University of Minnesota for her valuable contributions to the University. The Certificate was presented by the president of the University, Dr. J. L. Morrill, at the Coffman Memorial Union, in the presence of relatives, colleagues, and friends. The presentation ceremonies were recorded and broadcast in the evening over station KUOM.

From 1907 to 1915, Dr. Nye was on the School of Chemistry faculty of the University, and from 1921 to date, has been on the faculty of the Medical School in the Department of Pediatrics, successively as clinical instructor and Clinical Assistant Professor of Pediatrics. From June 30, 1953, she had held the rank of Emeritus Clinical Assistant Professor of Pediatrics.

* * *

Dr. E. Mendelssohn Jones, chief of the surgical division of the staff of the Ancker Hospital, Saint Paul, since 1948, was recently elected chief emeritus of the section by the staff members. Dr. Jones has been a member of the Ancker Hospital surgical staff since 1918 and has given devoted service to the hospital for the past thirty-four years. In 1951, Dr. Jones was honored at a testimonial dinner tendered him by the surgical staff of the hospital.

Dr. Jones is a past president of the Ramsey County Medical Society (1928), the Minnesota State Medical Association (1944), and the Minnesota Academy of Medicine (1937). He was recently elected secretary of the State Board of Medical Examiners.

* * *

Democracy in action exemplified in a new motion picture film—"A Citizen Participates"—shows how members of a rural community can work together to get a physician. Produced by the Centron Corporation and cleared by the American Medical Association, this film should be a valuable public relations tool for state and county medical societies. The film may be obtained on loan from Young America Films, Inc., for showings to various organizations and business groups in your community. Running time—twenty-seven minutes. For further information contact: Young America Films, Inc., 18 East 41st Street, New York 17, N. Y.

* * *

More than one million dollars has been donated to medical education by physicians in the United States since the first of the year. Reports released by the American Medical Education Foundation indicate that approximately 11,000 physicians have contributed $800,000 to the Foundation since January 1. At the same time, records from thirty-three of the nation's seventy-nine accredited medical schools show that 8,217 doctors have contributed $301,426.42 directly to their alumni organiza-

DANIELSON MEDICAL ARTS PHARMACY, INC.

10-14 Arcade, Medical Arts Building
825 Nicollet Avenue—Two Entrances—78 South Ninth Street
MINNEAPOLIS

PHONES:
ATLANTIC 3317
ATLANTIC 3318

HOURS:
WEEK DAYS—8 to 7
SUN. AND HOL.—10 TO 1

tions. These figures indicate that 9.9 per cent of the nation's physicians have given in excess of one million dollars this year to help alleviate the financial stress in medical education today.

* * *

The Crippled Child, published bi-monthly by the National Society for Crippled Children and Adults, will change its approach after its thirty years of existence. The magazine will be directed to the parents of the crippled child who are so responsible in meeting the new and difficult problems of adjustment particularly in the home. Two new editors have been added to the staff of the magazine: Earl S. Miers, a well known author and lecturer and a member of the executive committee of the National Society, and Dr. Noah D. Falricant, a well known medical writer as an associate editor of the *Journal of the American Medical Association.*

* * *

Dr. Byrl Kirklin, department of radiology, and **Dr. Frank Krusen,** head of the section on physical medicine, both of the Mayo Clinic, were among those named June 18, to serve as senior civilian consultants to the surgeon general of the Army.

* * *

Dr. E. G. Howard, of Hayfield, began practice in Spring Valley, August 1. Dr. Howard had practiced at Hayfield for a year and a half following his separation from the Navy.

* * *

Dr. Julius Buscher, of St. Cloud, is the author of the novel *The Doctor's Last Message,* which was published in June by Exposition Press, Inc., New York, New York. Dr. Buscher was born in Osnabrueck, Germany, and received his medical degree in Heidelberg. Licensed in Minnesota in 1924, he has been practicing in St. Cloud for more than twenty-five years.

* * *

Dr. Gordon Erik Johnson, of Minneapolis, recently graduated from the University of Minnesota Medical School, was married June 20, to Shirley Ann Marshall, of Sibley, Iowa. Dr. Johnson is interning at St. Luke's Hospital, Duluth.

* * *

Dr. Robert Shragg, who recently completed his internship at Minneapolis General Hospital, joined **Dr. William Thomas,** of Howard Lake, in practice, July 1.

* * *

Dr. F. F. Callahan, state tuberculosis control officer and **Dr. Ezra Bridge,** Cannon Falls sanatorium, were among those named by Gov. C. Elmer Anderson to a nine-member commission studying facilities for treatment of tuberculosis in Minnesota.

STOP . . .
BEFORE YOU BUY YOUR NEW CAR— SEE US . . .
we can save you money on the finance charge.
AMERICAN NATIONAL BANK
OF SAINT PAUL
Bremer Arcade Robert at 7th CE 6666
Member Federal Deposit Insurance Corporation

Hall, Anderson & Nordehn
PRESCRIPTION PHARMACY
BIOLOGICALS
PHYSICIANS' SUPPLIES
SAINT PAUL, MINN.
LOWRY MEDICAL ARTS BUILDING
TELEPHONE: CEDAR 2735

Dr. Douglas Perkins, recently graduated from the University of Minnesota Medical School, joined the staff of the Alexandria Clinic, July 1. The association of Dr. Perkins with the clinic brings the number of staff physicians to seven, with one, **Dr. Peter M. Geiser,** now on leave of absence with the Army Medical Corps.

* * *

Guest speakers at an "alumni reunion" of former patients of Ah-Gwah-Ching Sanatorium, included **Dr. F. F. Callahan,** former superintendent of the sanatorium and now director of medical services of the State Division of Social Welfare; **Dr. T. J. Kinsella,** Minneapolis surgeon who pioneered many of the surgical techniques now used in the treatment of tuberculosis, and Helmer Gunnarson, of the State Rehabilitation office.

* * *

Dr. Richard Nicholson, of Peterson, Iowa, began medical practice in Heron Lake, July 1. Dr. Nicholson was graduated from Harvard Medical College and has spent seventeen months in military service during World War II.

* * *

Dr. J. L. Emmett, of the Mayo Clinic, presented several papers at the fifty-eighth anniversary meeting of the Upper Peninsula Medical Society, held in Escanaba, Michigan, June 20.

Dr. Russell A. Johnson of Grand Rapids, recently graduated from the University of Minnesota Medical School, began July 1, a year of service with the United States Public Health Service. Dr. Johnson has been assigned as assistant surgeon at the U. S. Public Health Service Hospital in San Francisco, California.

* * *

Dr. Fred W. Rankin, of Lexington, Kentucky, formerly of Rochester, will be installed as president of the American College of Surgeons, at the meeting to be held in Chicago, October 5-9.

* * *

Dr. A. A. Schmitz, head of the staff of the new St. Joseph's Hospital, Mankato, presented a gift from the staff to Sister Margaret, Sister Superior who left June 18, for a new assignment in New Jersey. An informal reception was held in honor of Sister Margaret, in the hospital cafeteria.

* * *

MINNESOTA BLUE CROSS-BLUE SHIELD

Never before has the attendance or interest of physicians or their office personnel reached such high levels as were experienced in the Blue Cross-Blue Shield booth at the recent annual meeting of the Minnesota State Medical Association. The records show that 258 participating physicians visited the booth and signed cards requesting a Blue Shield plaque, and a great many more doctors stopped at the booth for information or discussion of their Blue Shield problems. Besides the professional group which included many residents, interns, and out-of-state doctors, quite a few members of doctors' office staffs visited and were able to obtain specific information regarding the procedures involved in filing Blue Shield claims. In attendance for Blue Shield during the entire convention were either the manager of the Claims Department or the manager of the Professional Relations Department to discuss all of the problems or questions which the doctors or members of their office staffs might raise. In addition, a member of the claims examiner staff was present much of the time to answer questions regarding filing and processing of Blue Shield claims. A member of the Blue Cross personnel was also in attendance at the booth during the convention, and it was very encouraging to note the interest shown by the doctors for adequate Blue Cross protection both for their patients and themselves. Interest was especially shown on the new $25 Deductible Blue Cross contract.

During the meetings, the Professional Relations Department displayed a new Blue Shield plaque which is being offered without charge to all participating physicians or clinics for their offices or reception rooms. The plaque consists of a blue shield with a central caduceus on a gray wooden background, and on the face of the shield are printed the words, "Participating Doctor of Medicine, Minnesota Medical Service, Inc." The plaque met with a very gratifying and enthusiastic acceptance from the doctors who visited the booth and 258 of them signed cards requesting a plaque for prominent display in their offices. Frequently, it was mentioned that very often people want to know whether or not a doctor is a participating physician in Blue Shield. This is corroborated by the relatively large number of inquiries received at the Blue Shield office from subscribers asking, "How can I tell if a doctor is participating or not?" It appears that more patients are asking this question every day. The use of the participating physician plaque provides the answer and does it in a manner which is attractive.

Since it is the desire of Blue Shield that every participating physician have the opportunity to obtain a plaque, those doctors who were unable to visit the Blue Shield booth during the recent meeting may now send either a letter or post card to the Professional Relations Department, Minnesota Medical Service, Inc., 2610 University Avenue, St. Paul 14, Minnesota, requesting a plaque for prominent display in their office. Delivery of the plaque will be made just as soon as they are received from the manufacturer.

The meeting also provided a good opportunity for the Professional Relations Program of Blue Shield to initiate a free exchange of ideas, suggestions, and information between Blue Shield and the participating doctors of medicine. Discussion with the many and various physicians was extremely encouraging in demonstrating the solidarity of the medical profession in support of the Blue Shield Plan. The importance of Blue Shield in modern medical economics as well as its future development and goals were frequently stressed by the doctors themselves, and valuable information and suggestions were obtained from the visiting doctors. In addition to obtaining suggestions from the physicians, the primary theme at the Blue Cross-Blue Shield booth was one of service to the doctors and their staffs. In this regard, a wealth of information and data was provided not only to practicing physicians but also to those who are now engaged in residencies and internships and soon will be in private practice.

During the month of April, Blue Cross enrolled 13,699 participant subscribers bringing the net enrollment to 964,140 Blue Cross participant subscribers.

During the month of April, Blue Cross paid $1,234,967.90 to hospitals for the care of Blue Cross subscribers bringing the total amount paid for the first four months of 1953 to $4,851,512.25.

During the month of April, Blue Shield enrolled 14,712 Blue Shield participant subscribers bringing the net enrollment to 568,406 Blue Shield participant subscribers. For the month of April, Blue Shield paid $376,269.98 to doctors for the care of Blue Shield subscribers bringing the total amount paid for the first four months of 1953 to $1,465,119.05.

Blue Cross and Blue Shield are now sponsoring the Charles McCuen "News At Noon" over WCCO-TV, Monday through Friday. Blue Cross sponsors the Saturday night 10:00 p.m. Cedric Adams newcast on WCCO radio.

Both Charles McCuen and Cedric Adams are proving their worth as Ambassadors for Minnesota Blue Cross-Blue Shield and are achieving results in securing inquiries which have been converted into new Blue Cross and Blue Shield subscriber contracts.

BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical Libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

VIRAL AND RICKETTSIAL INFECTIONS OF MAN. Edited by Thomas M. Rivers, M. D. Director of the Hospital of the Rockefeller Institute for Medical Research, with the collaboration of a group of 29 distinguished authorities. Cloth. $7.50. Second Edition, 736 Pages with 74 illustrations and seven color plates. Philadephia. J. B. Lippincott Company, 1952.

Rapid expansion of knowledge of virus and related infections has made a compact, yet fairly comprehensive text necessary for the practicing physician, resident, and medical student. This second edition follows the first by only four years. The thirty-nine chapters can be divided into two sections, the first ten of which concern themselves with the technical aspects of virology. These chapters should be particularly interesting and informative to the physician who is more than ten years out of medical school, for they describe the use of the electron microscope, the ultra centrifuge, and other techniques used in the purification of these infective materials. Tissue culture, embryo culture, serologic reaction, hemagglutination, and propogation of viruses and rickettsiae are discussed, in a language which the practicing physician and student will have no difficulty in understanding. The remaining chapters for the most part include the diagnosis, prognosis, and current treatment of choice of the various diseases, resulting from infection by these agents. Individual chapters are devoted to most of the common virus infections and where these are related one to another they are discussed in a unit. Each unit of the book is written by a contributor of authority. Integration of the medical aspects presented throughout the book is emphasized in the chapter "Diagnosis of Viral and Rickettsial Infections," by Sabin, Horsfall, Meyer, Scott, and Snyder. Of interest is a chapter on "Infections of Minor Importance" which includes cat scratch disease epidemic viral gastroenteritis, and generalized salivary gland virus infections.

The second edition includes new chapters on "The Coxsackie Group," "Hemagglutination by Viruses," and "Interference Between Animal Viruses." The pediatrician, neurologist, and internist, will be interested in the section on "Viral Encephalitides."

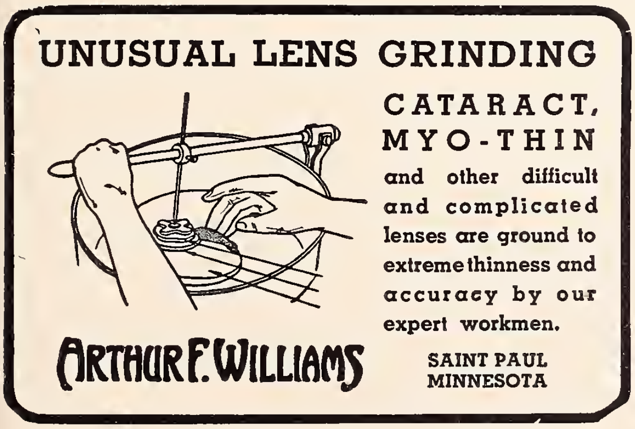
The work attempts and succeeds to a large degree in integrating the practical aspects and therapeutic problems in the viral and rickettsial diseases of man. One of the most delightful things about this large volume and its equally large companion volume reviewed below is the price. These books sell for approximately one third of the usual cost made possible by a grant from the National Foundation for Infantile Paralysis. The reviewer enthusiastically can recommend this volume not only as a reference text, but for lively informative reading on an important medical subject.

G. J. S.

BACTERIAL AND MYCOTIC INFECTIONS OF MAN. Edited by Rene J. Dubos, Ph. D., The Rockefeller Institute for Medical Research, with the collaboration of a group of thirty-six distinguished authorities. Second edition, Cloth. $7.50. 900 pages with 98 illustrations. Philadelphia: J. B. Lippincott Company, 1952.

This is a companion volume to "Viral and Rickettsial Infections of Man" reviewed above. For those not familiar with the first volume of this text it should be made plain that this is a textbook on bacteriology and mycology. In it one will find the usual material of this basic science, the morphology and the physiology of bacteria, serology, immunology, and related properties of bacteria which enable them to cause disease and which permit the host a defensive response. The principle pathogens are taken up by groups according to their usual classification. Under each group the history, morphology, cultivation, and toxin if any, is disclosed. The bacteriological laboratory diagnosis is outlined and the pathogenesis in animals and man considered. The clinical picture of the disease in man is briefly and only briefly touched upon. There follows then the usual discourse on prevention, control, and treatment, including modern antibiotics.

New contributions to the second volume include, recent advances in chemotherapy, blood groups, bacterial genetics, and bacterial physiology. The chapter on medial mycology is extremely brief and would not be very



UNUSUAL LENS GRINDING

CATARACT, MYO-THIN

and other difficult and complicated lenses are ground to extreme thinness and accuracy by our expert workmen.

ARTHUR F. WILLIAMS

SAINT PAUL
MINNESOTA

RADIUM RENTAL SERVICE
4340 CEDARWOOD ROAD
MINNEAPOLIS 5, MINNESOTA
TEL. ATLANTIC 5297

Radium element prepared in type of applicator requested

ORDER BY TELEPHONE OR MAIL
PRICES ON REQUEST

satisfying to an experienced clinician seeking information.

For the medical student it would appear to make a good textbook in this basic science. It relates the clinical aspects and the therapeutic problems in a way which should be helpful to the student. To the resident and general practitioner who still maintains his scientific curiosity and pride in maintaining up-to-date knowledge in the basic sciences, this volume can be recommended enthusiastically. The mechanics of the book are good. It is printed in double columns in readily understandable language. Like most modern texts it contains an ample bibliographic as well as subject index. The price is extremely modest.

G. J. S.

THE TOXEMIAS OF PREGNANCY, by William J. Dieckmann, S.B., M.D.; Mary Campau Ryerson, Professor and Chairman of the Department of Obstetrics and Gynecology of the University of Chicago, Chief of Service of The Chicago Lying-in Hospital and Dispensary, Attending Gynecologist; Albert Merrit, Billings Memorial Hospital of the University of Chicago, Associate Editor of the *American Journal of Obstetrics and Gynecology.* 2d Edition. 710 p. Illustrated. St. Louis: C. J. Mosby Co., 1952. Cost $14.50.

The second edition of *Toxemias Of Pregnancy* is a tremendous volume devoted to a complete study of the history, classification, incidence, pathology, physiology, etiology, clinical manifestation, treatment, maternal and fetal prognosis, and prenatal care of the toxemias of pregnancy.

After reviewing this textbook I feel that most of the world literature regarding toxemia of pregnancy has been reviewed and included in this book plus the results of the author's observations and experiments. The material has been well organized and presented. At the end of each chapter there are available the necessary references of which there are many.

It is not for me to criticize a work of this type and caliber, and I think that there are only a select few individuals in this country who are in such a position. In my mind there is no doubt that anyone interested in obstetrics as a clinician, teacher or research worker will obtain a considerable amount of useful information from Dr. Dieckmann's *Toxemias Of Pregnancy.*

JOSEPH F. MELANCON, M.D.

SKILL AND CARE!

Combine with quality materials in all Buchstein-Medcalf orthopedic appliances. Our workmanship and scientific design conform to the most exacting professional specifications. Accepted and appreciated by physicians and their patients for more than 45 years.

ARTIFICIAL LIMBS, TRUSSES,
ORTHOPEDIC APPLIANCES,
SUPPORTERS, ELASTIC HOSIERY

Prompt, painstaking service

Buchstein-Medcalf Co.
223 So. 6th St. Minneapolis 2, Minn.

NOMENCLATURE AND CRITERIA FOR DIAGNOSIS OF THE HEART AND BLOOD VESSELS. New York: Published by the New York Heart Association, under the chairmanship of Dr. Harold E. B. Pardee, 1953. Price $4.95.

A completely revised and greatly expanded edition of a unique medical handbook, *Nomenclature and Criteria for Diagnosis of Diseases of the Heart and Blood Vessels,* has been prepared by the New York Heart Association, and is now being offered to general practitioners, cardiologists, medical students, and interns throughout the country by the American Heart Association and its affiliates. Some entirely new concepts and viewpoints in the cardiovascular field are included in the latest edition. The previous edition was published in 1939.

The illustrated handbook is intended primarily to clarify and standardize the language used by the medical profession in diagnosing cardiovascular diseases. By enabling physicians to record their findings more precisely, it assists them in communicating vital information to other physicians or to hospital or clinic personnel who co-operate in the management of the patient.

First published in 1929, *Nomenclature and Criteria* has come to be accepted as the standard work in its field. All editions have been prepared by the Criteria Committee of the New York Heart Association, under the Chairmanship of Dr. Harold E. B. Pardee.

For the first time, the handbook includes a section on diseases of the peripheral vessels, which comprise the smaller arteries, capillaries, and veins. This group of diseases has only recently come to be recognized widely as an entity in the cardiovascular field and as an important cause of disability and death.

Extensive revisions have been made and new material added to the sections on x-ray and electrocardiography to conform with recent advances. The criteria for the diagnosis of rheumatic fever, an important cause of heart disease, have been amplified and made more exacting, and the criteria for diagnosis of congenital abnormalities have been expanded. New information has been added on injuries of the heart and great vessels.

The new edition also contains a revised Chart of Functional Capacity and Therapeutic Classification to help the physician prescribe the amount of physical activity he feels the patient may perform. This chart, which was developed by the Criteria Committee of the New York Heart Association, is generally accepted as standard throughout the United States. For the convenience of doctors and other professional persons using the chart, the American Heart Association has reprinted it on a handy 4" x 9½" card to be kept for quick reference in a desk corner, or a jacket pocket, or for use as a book mark. Among other advantages, the classification chart offers a uniform terminology for transmitting information needed by the employment counselor and rehabilitation worker.

Nomenclature and Criteria may be purchased through The Minnesota Heart Association or book stores. The Minnesota Heart Association headquarters are at 532 Endicott Building, Saint Paul, Minn.

CARDIAC THERAPY. By Harold J. Stewart, M.D., F.A.C.P.; Associate Professor of Medicine, Cornell University Medical College, New York; Attending Physician, New York Hospital; Head of Division of Cardiology, Department of Medicine, New York Hospital-Cornell Medical Center. 622 pages. Illus. Price, $10.00. New York: Paul B. Hoeber, 1952.

Each chapter of this book contains a wealth of information for all physicians. The author has drawn heavily from his own medical practice and from that of his medical associates. The result is a very desirable, finely outlined plan of treatment for each cardiac problem.

The large table of contents would suggest that every cardiac manifestation of disease has been considered. The latest developments in cardiology have been dealt with in this treatise. The author has given adequate discussions to cardiac surgery and to the effect of electrolyte changes in the blood on the heart and circulation.

The final chapters include two that will be valued highly. These are, "What to Tell the Patients About their Heart Disease" and "Diets in Heart Disease."

Donald W. Koza, M.D.

Classified Advertising

Replies to advertisements with key numbers should be mailed in care of Minnesota Medicine, *2642 University Avenue, Saint Paul 14, Minn.*

FOR RENT—Attractive doctor's suite in south Minneapolis. Wonderful location for a practice to be built up, or as an outlying office for a downtown doctor. Write Wm. L. Cochrane, 7301 Fremont Avenue South, Minneapolis 19, Minnesota. Telephone RO 9-8758.

FOR SALE—American crystal controlled mobile diathermy—XM400 dynotherm. Council-accepted, practically new, with stand—$300. Address E-371, care Minnesota Medicine.

FOR SALE—Hamilton Steeltone examining chair-table, Allison "Monarch" suite-instrument cabinet, examining table, treatment stand, stool, waste receiver, McKesson waterless metabolar, Raytheon microtherm console, complete line of small equipment and instruments, all less than five years old. Excellent bargain for someone opening a new office. R. J. Kotval, M.D., Pipestone, Minnesota.

WANTED—A general practitioner for Fergus Falls State Hospital. Beginning salary $626.00 per month. Three bed room house available, partially furnished, subsistence, garage, Government working conditions, paid holidays, vacation, sick leave and retirement pension plan. Address inquiries to W. L. Patterson, M.D., Superintendent Fergus Falls State Hospital, Fergus Falls, Minnesota.

WANTED—General Practitioner, to be associated with busy general practice, South Dakota. Able to do obstetrics and some general surgery. Completely modern clinic building, new equipment. New 20-bed hospital in county seat town of 1200. Salary open. Early partnership. Address E-373, care Minnesota Medicine.

PLACEMENT SERVICE

The Minnesota State Medical Association maintains a Medical Placement Service for the benefit of physicians who are looking for locations and positions; also for communities, medical groups and physicians who are looking for licensed medical assistance. For information, write to the Minnesota State Medical Association, 496 Lowry Medical Arts Bldg., Saint Paul 2, Minnesota.

ASSOCIATE WANTED—In private practice of Neurology and Psychiatry in Saint Paul. Specialty training not required. Salary open. Address E-362, care Minnesota Medicine.

WANTED IMMEDIATELY: Associate for general practice; excellent opportunity; twenty miles from Twin Cities; modern equipped office; fine hospital facilities. For further information call Garfield 5878 at Saint Paul between 9 A.M. and 5 P.M., or Dale 5459 after 5 P.M.

FOR RENT—Physician's office northeast corner building University Avenue and Dale Street. Inquire 490 North Dale Street, Saint Paul, Minnesota.

WANTED—Young associate in busy general practice conducted in office and hospital. New modern clinic building, all new equipment. Full staff privileges available in fully approved hospital. Opportunity for partnership. Beginning salary, $750 a month. Address E-375, care Minnesota Medicine.

WANTED—Physician to share new building with dentist in settled and growing community in Saint Paul. For appointment call De Soto 3766.

A Complete Service
FOR THE MEDICAL AND HOSPITAL PROFESSION
Physicians & Hospitals Supply Company, Inc.
1400 Harmon Place ● Minneapolis 15, Minnesota

Index to Advertisers

Abbott Laboratories 678, 679, 688
Aloe, A. S., Co. 781
American Meat Institute 686
American National Bank 785
Anderson, C. F., Co., Inc. 775
Ar-Ex Cosmetics, Inc. 782
Ayerst, McKenna & Harrison 684

Bayer Co. 680
Benson Optical Co. 783
Birches Sanitarium, Inc. 780
Boyd & Boyd 682
Brown & Day, Inc. 778
Buchstein-Medcalf Co. 788

Caswell-Ross Agency 674
Ciba Pharmaceutical Products, Inc. 691
Classified Advertising 790
Cook County Graduate School of Medicine 770
Crestview Hospital 771

Dahl, Joseph E., Co. 774
Danielson Medical Arts Pharmacy, Inc. 784
Druggists Mutual Insurance Co. 789

Ewald Bros. .... Inside Back Cover

Glenwood Hills Hospitals 791

Hall, Anderson & Nordehn 785
Hazelden Foundation 778
Homewood Hospital 780

Juran & Moody 777

Knox Gelatine 769

Lederle Laboratories .... facing page 688
Lilly, Eli, & Co. .... Front cover, 692

Mead Johnson & Co. 792
Medical Protective Co. 770
Milwaukee Sanitarium .... Back Cover
Mounds Park Hospital .... Back Cover

North Shore Health Resort 779

Parke, Davis & Co. .... Inside Front Cover, 673
Patterson Surgical Supply Co. 782
Pfizer, Chas., & Co. 685
Philip Morris & Co. 683
Physicians Casualty Association 773
Physicians & Hospitals Supply Co. 690, 789
Professional Credit Protective Bureau 677

Radium Rental Service 787

St. Croixdale Sanitarium 676
Searle, G. D., & Co. 767
Sheltering Arms 773

Ulmer Pharmacal Co. 772
Upjohn Co. 681

Wander Co. 689
Whittaker Laboratories, Inc. 774
Williams, Arthur F. 787
Winthrop-Stearns, Inc. 687

Insurance at a Saving
Druggists' **Mutual Insurance** Company
OF IOWA, ALGONA, IOWA
Fire - Tornado - Automobile Insurance
Prompt Loss Service
MINNESOTA REPRESENTATIVE—S. E. STRUBLE, WYOMING, MINN.

DOCTOR . . . *This is Your Hospital and Your School of Neuropsychiatric Nursing*

(By that we mean that not only have these institutions undertaken to constitute a haven of help for patients, but they form, in your interest a *remarkable facility for you professionally.)*

View of hospital, school, buildings and environs, 7 minutes from downtown Minneapolis

A COMPLETE NEURO-PSYCHIATRIC HOSPITAL

Up-to-date in all respects, new, functional buildings, set in spacious grounds, rehabilitation center, electroencephalography, therapies, laboratory. One of the largest neuro-psychiatric staffs in the United States. A voluntary, non-profit, non-sectarian institution of which this region may be proud.

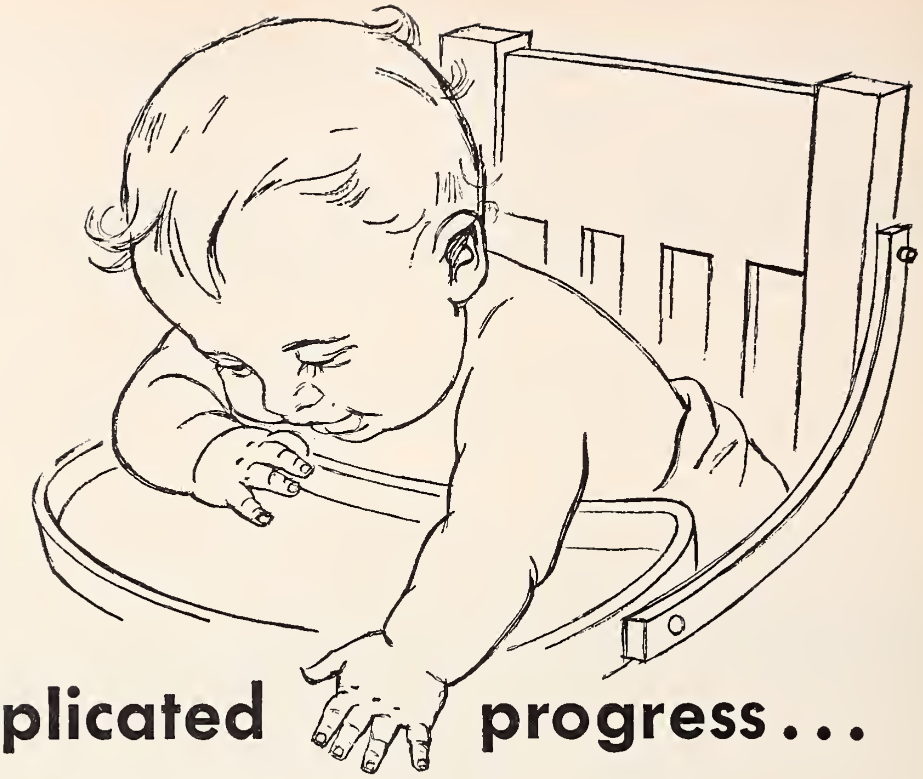
SCHOOL FOR NEURO-PSYCHIATRIC NURSING

To offset the existing universal shortage of nurses, Glenwood Hills conducts a one-year course in neuro-psychiatric nursing. You have observed the skill and attitudes of our graduates and trainees. Recruit one or two in behalf of your profession as a "contribution" stipulating that we send them back to you when trained. We will. Meanwhile tuition, room and board are free.

Glenwood Hills Neuro-psychiatric Hospital
School of Neuro-psychiatric Nursing

3901 Golden Valley Road, Minneapolis 22, Minnesota JUniper 2771

Helen Swenson Rascop, Director of Nurses



uncomplicated progress...

Tolerance of feedings	good
Incidence of digestive disturbances	low
Growth response	satisfactory
Discontinuation of night feeding	early
Health and development	excellent

The uncomplicated nutritional progress[1] of infants fed Lactum® speaks for its sound rationale. Lactum is Mead's liquid formula made from whole milk and Dextri-Maltose.®

It provides generous milk protein for sturdy growth and sound tissue structure, with sufficient calories to spare protein and meet the infant's energy needs.

Lactum is convenient and easy to prepare—simply mix equal parts of Lactum and water for a formula supplying 20 calories per fluid ounce.

[1] Frost, L. H., and Jackson, R. L.: J. Pediat. 39: 585-592, 1951.

Lactum
LIQUID FORMULA FOR INFANTS
(Modified Milk)
MEAD

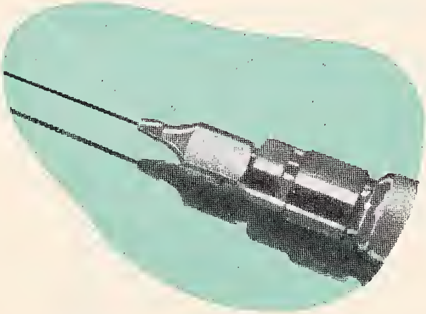
Lactum

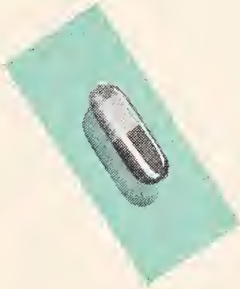
MEAD

MEAD JOHNSON & COMPANY
Evansville 21, Ind., U.S.A.

BENADRYL®

effective antihistaminic





When pollens provoke symptoms in sensitive patients, BENADRYL Hydrochloride (diphenhydramine hydrochloride, Parke-Davis) quickly checks sneezing, nasal discharge, nasopharyngeal itching, and lacrimation. Because relief is rapidly obtained and gratifyingly prolonged, a comfortable "hay fever season" can be prescribed for most patients.

BENADRYL Hydrochloride is available in a variety of forms—including Kapseals,® 50 mg. each; Capsules, 25 mg. each; Elixir, 10 mg. per teaspoonful; and Steri-Vials,® 10 mg. per cc. for parenteral therapy.

MEDICAMENTA · VERA ·
P D CO.

Parke, Davis & Company
DETROIT, MICHIGAN

A way to lose money in a hurry

When you are flat on your back with your income cut off and with bills accumulating in increasing amounts as a result of a sickness or accident it's mighty easy to lose money—and in a hurry. In addition to that, the expense of maintaining you and your dependents continues.

The bright thing about the picture is that it's easy to insure your income assuring stability and maintenance of saved capital. It would be smart to insure in an investigated and tested plan, one that is available through your own Society. Apply now!

CR
AGENCY
Minneapolis

CASWELL-ROSS AGENCY

1177 N. W. Bank Building
Minneapolis 2, Minnesota
Minneapolis—MA 2585
St. Paul—PR 7004

Insurors to:

Minnesota State Bar Association
Minnesota State Dental Association
Minnesota State Medical Association
Minnesota Society of C. P. A.
Minnesota State Pharmaceutical Assn.
Minnesota Auto Dealers Association
Minnesota Federation of Eng. Societies
Minnesota State Veterinary Medical Soc.
Hennepin County Medical Society
Hennepin County Bar Association
11th Judicial Bar Association
Minneapolis Association of Life Underwriters
Ramsey County Medical Society
Ramsey County Bar Association
St. Paul District Dental Soc.
Minneapolis District Dental Soc.
St. Cloud Dental and Stearns County Medical Society
Duluth District Dental Society
East Central Medical Society
St. Louis County Medical Society
West Central Dist. Dental Society
Northwest Proprietors Association
St. Paul Life Underwriters, Inc.

Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 36 **August, 1953** **Number 8**

Contents

The Use of Radioisotopes in Treatment.
J. E. Rall, M.D., Ph.D., New York, New York.. 817

Diagnosis and Treatment of Postpoliomyelitic Contractures.
Marcel H. Vandemoortele, M.D., and *Paul R. Lipscomb, M.D.,* Rochester, Minnesota......... 824

Cancer of the Tongue.
Arnold J. Kremen, M.D., Minneapolis, Minnesota 828

Solitary Nonparasitic Cysts of the Liver.
David Gaviser, M.D., Minneapolis, Minnesota.... 831

The Use of the Kuntscher Nail for Fractures of the Femoral Shaft.
Daniel J. Moos, M.D., Minneapolis, Minnesota.. 837

Allergic Reaction to Para-aminosalicylic Acid.
Robert P. Koenig, M.D., Paynesville, Minnesota.. 850

History of Medicine in Minnesota.
Medical History of the County of Yellow Medicine. *(Continued)*
Mildred B. Lee, Granite Falls, Minnesota...... 851

President's Letter.
Round-up Season 858

Editorial:
New Editor and Business Manager............. 859
Medical Licensure Statistics for 1952.......... 859
Cancer Warnings Not Overdone................. 860

The Dean's Page.
University Hospitals Admission Policy.......... 861

Medical Economics:
Increase Noted in Medical Education Fund...... 862
State Medicine Has Economic Appeal........... 862
AMA Reapproves Medical Expense Deductions.. 863
Social Security System Hit by Senator Bricker.. 863
Health Insurance Book Available from AMA.... 864

American Medical Association—House of Delegates—Résumé of Proceedings—New York City June 1-5, 1953....... 865

Reports and Announcements.................... 872

Woman's Auxiliary 879

In Memoriam 880

Of General Interest............................. 884

Book Reviews 892

Contents of Minnesota Medicine copyrighted by Minnesota State Medical Association, 1953

Entered at the Post Office in Saint Paul as second class mail matter. Accepted for mailing at the special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 13, 1918.

MINNESOTA MEDICINE

OFFICIAL JOURNAL OF THE MINNESOTA STATE MEDICAL ASSOCIATION
Published by the Association under the direction of its Editing and Publishing Committee

Office of Minnesota State Medical Association,
496 Lowry Medical Arts Bldg., Saint Paul 2, Minnesota.

EDITING AND PUBLISHING COMMITTEE

E. M. HAMMES, Saint Paul	T. A. PEPPARD, Minneapolis
PHILIP F. DONOHUE, Saint Paul	H. A. ROUST, Montevideo
L. M. EATON, Rochester	O. W. ROWE, Duluth
J. J. HEIMARK, Monterey	HENRY L. ULRICH, Minneapolis
C. L. OPPEGAARD, Crookston	A. H. WELLS, Duluth

EDITORIAL STAFF
CARL B. DRAKE, Saint Paul, Editor
GEORGE EARL, Saint Paul, Associate Editor
HENRY L. ULRICH, Minneapolis, Associate Editor

BUSINESS MANAGER
J. R. BRUCE

Annual Subscription—$3.00. Single Copies—$0.40. Foreign and Canadian Subscriptions—$3.50.

The right is reserved to reject material submitted for editorial or advertising columns. The Editing and Publishing Committee does not hold itself responsible for views expressed either in editorials or other articles when signed by the author.

Classified advertising—ten cents a word; minimum charge, $2.00; key number, 25c additional. Remittance should accompany order.

Display advertising rates on request.

Address all communications concerning the journal to Minnesota Medicine, 2642 University Avenue, Saint Paul 14, Minnesota. Telephone Nestor 2641.

A MODERN PRIVATE SANITARIUM

for the Diagnosis, Care and Treatment of Nervous and Mental Disorders

MAIN BUILDING—One of 10 Units in "Cottage Plan"

ST. CROIXDALE ON LAKE ST. CROIX

PRESCOTT, WISCONSIN

Located on beautiful Lake St. Croix, 18 miles from the Twin Cities, it has the advantages of both City and Country. Every facility for treatment provided, including recreational activities and occupational-therapy under trained personnel. Close personal supervision given patients, and modern methods of therapy employed. Inspection and cooperation by reputable physicians invited. Rates very reasonable. Illustrated folder on request.

Prescott Office
Prescott, Wisconsin
Howard J. Laney, M.D.
Tel. 39 and Res., 76

Consulting Neuro-Psychiatrists
Hewitt B. Hannah, M.D., Andrew J. Leemhuis, M.D.
527 Medical Arts Bldg., Tel. MAin 1357, Minneapolis, Minn.

Superintendent
Ella M. Leseman
Prescott, Wisconsin
Tel. 69

Upjohn

long-acting androgen:

Depo-Testosterone

Trademark Reg. U. S. Pat. Off. CYCLOPENTYLPROPIONATE

Each cc. contains:

Testosterone Cyclopentylpropionate	50 mg. or 100 mg.
Chlorobutanol	5 mg.
Cottonseed Oil	q.s.

50 mg. per cc. available in 10 cc. vials

100 mg. per cc. available in 1 cc. and 10 cc. vials

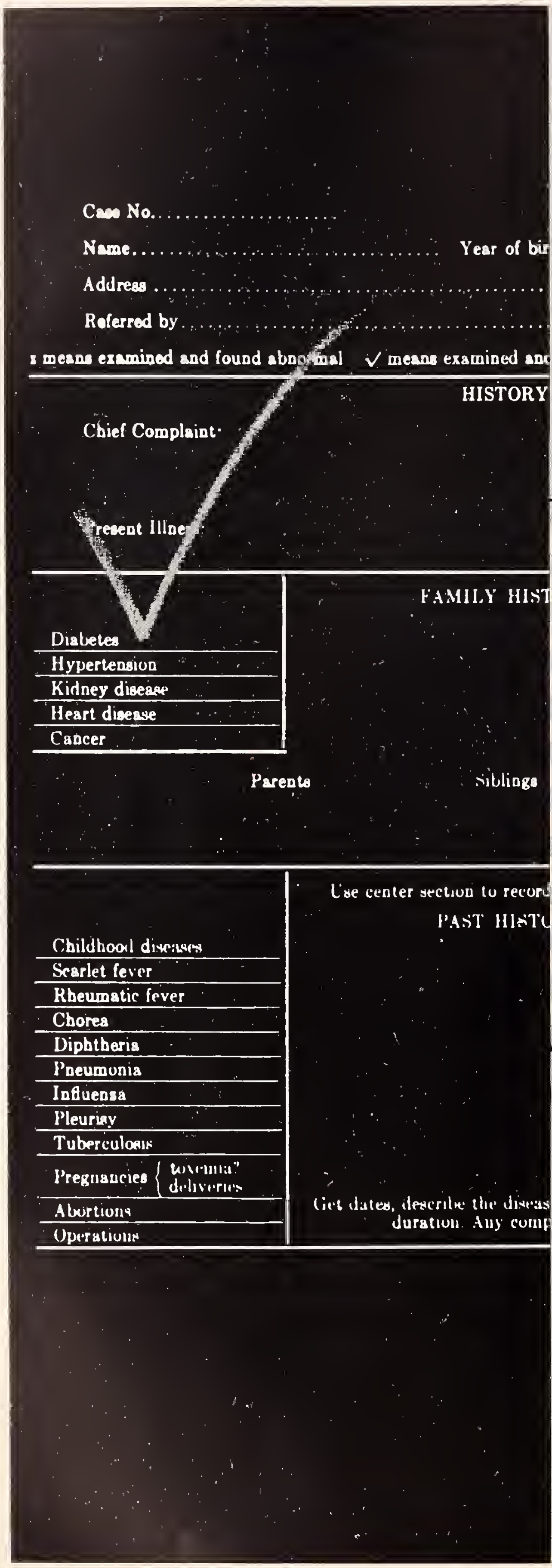
The Upjohn Company, Kalamazoo, Michigan

Vial
Depo*-Testosterone
Cyclopentylpropionate
per cc. in Cottonseed
Each cc. contains:
Cyclopentylpropionate
(Chloral deriv.),
in cottonseed oil.
For intramuscular use
TRADEMARK, REG. U.S. PAT.
Upjohn
Company, Kalamazoo

when the history hints at diabetes

CLINITEST®
BRAND

for urine-sugar analysis



Case No. ....

Name.................................... Year of bir

Address ....

Referred by ....

x means examined and found abnormal ✓ means examined anc

HISTORY

Chief Complaint·

Present Illne

FAMILY HIST

Diabetes
Hypertension
Kidney disease
Heart disease
Cancer

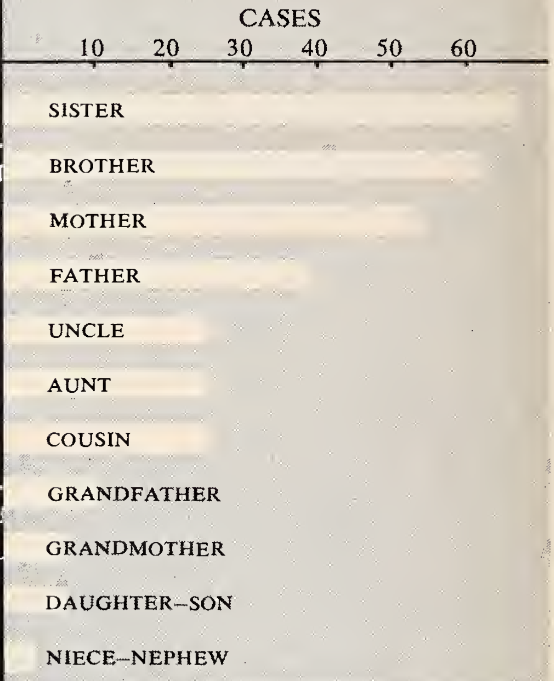
Parents Siblings

Use center section to recor

PAST HISTO

Childhood diseases
Scarlet fever
Rheumatic fever
Chorea
Diphtheria
Pneumonia
Influenza
Pleurisy
Tuberculosis
Pregnancies { toxemia? deliveries
Abortions
Operations

Get dates, describe the diseas
duration. Any comp



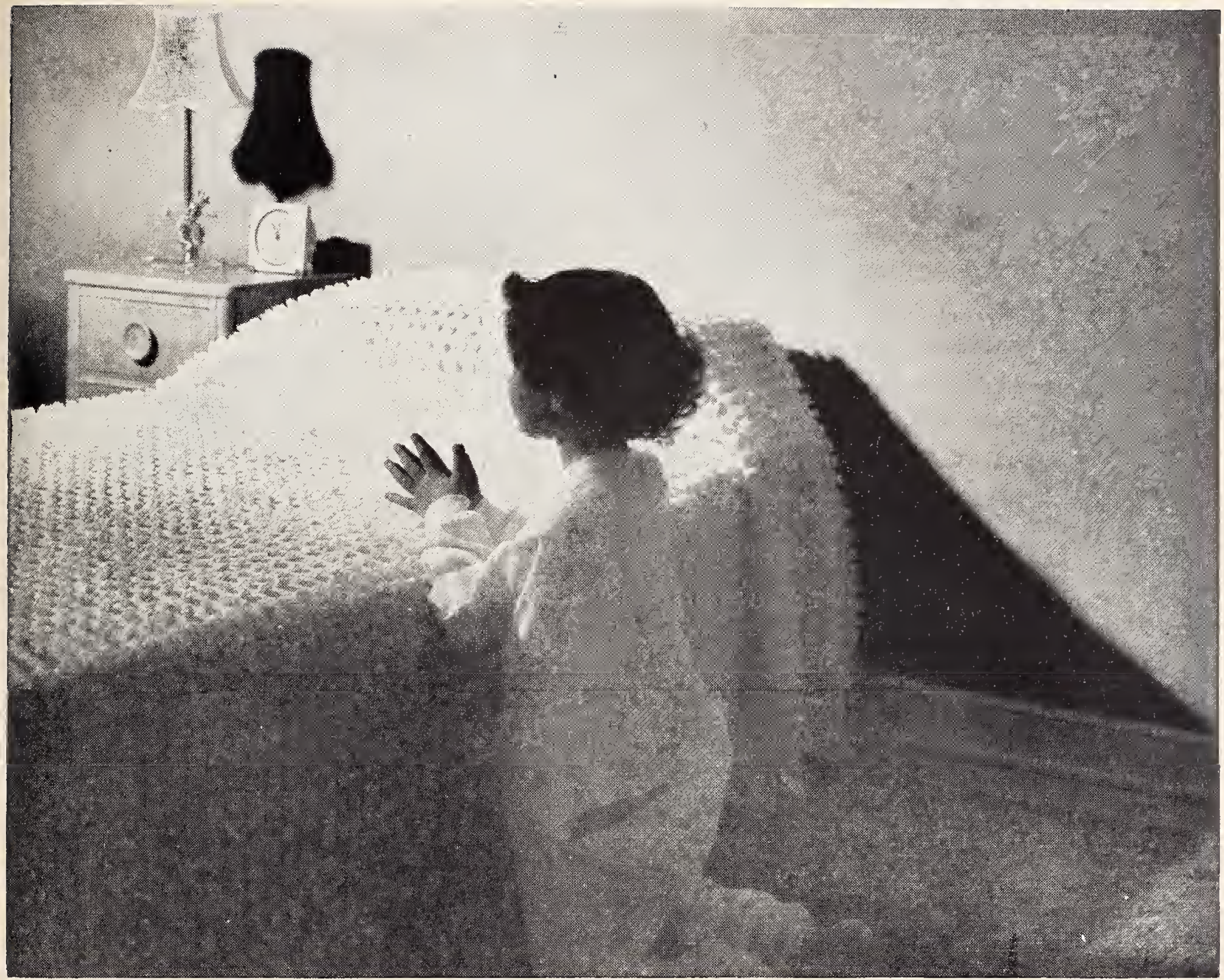
The Diabetic Relatives of 265 Diabetics[1]

In view of "...the very high incidence of...unsuspected cases among the blood relatives of diabetic patients,"[2] urine-sugar testing of all such individuals should be routine and frequent.

1. Barach, J. H.: Diabetes and Its Treatment, New York, Oxford University Press, 1949, p. 38.
2. Allen, F. M.: Diabetes Mellitus, in Piersol, G. M., and Bortz, E. L.: Cyclopedia of Medicine, Surgery, Specialties, Philadelphia, F. A. Davis Company, 1951, vol. 4, p. 505.

AMES
COMPANY, INC., ELKHART, INDIANA
Ames Company of Canada, Ltd., Toronto

46453



". . . and please get people to pay what they owe Daddy. Mommy says that's why he's so cross."

Are you burdened by a heap of uncollected accounts? The Professional Credit Protective Bureau can really help you.

The Professional Credit Protective Bureau is collecting thousands of past due accounts in the professional field.

The Professional Credit Protective Bureau is a credit control organization that sees that the patient pays direct to the supplier of services. In other words you PAY THE COLLECTION ORGANIZATION AFTER YOUR PATIENT HAS PAID YOU and neither you nor the debtor is embarrassed.

Ninety-two leading trade associations . . . including many medical and dental organizations . . . are recommending this credit control system as part of their service to members.

It will pay you to investigate this tried and true system. Use the attached coupon.

Professional Credit Protective Bureau
724 Metropolitan Bldg., Dept. MM 8-53
Minneapolis 1, Minn.

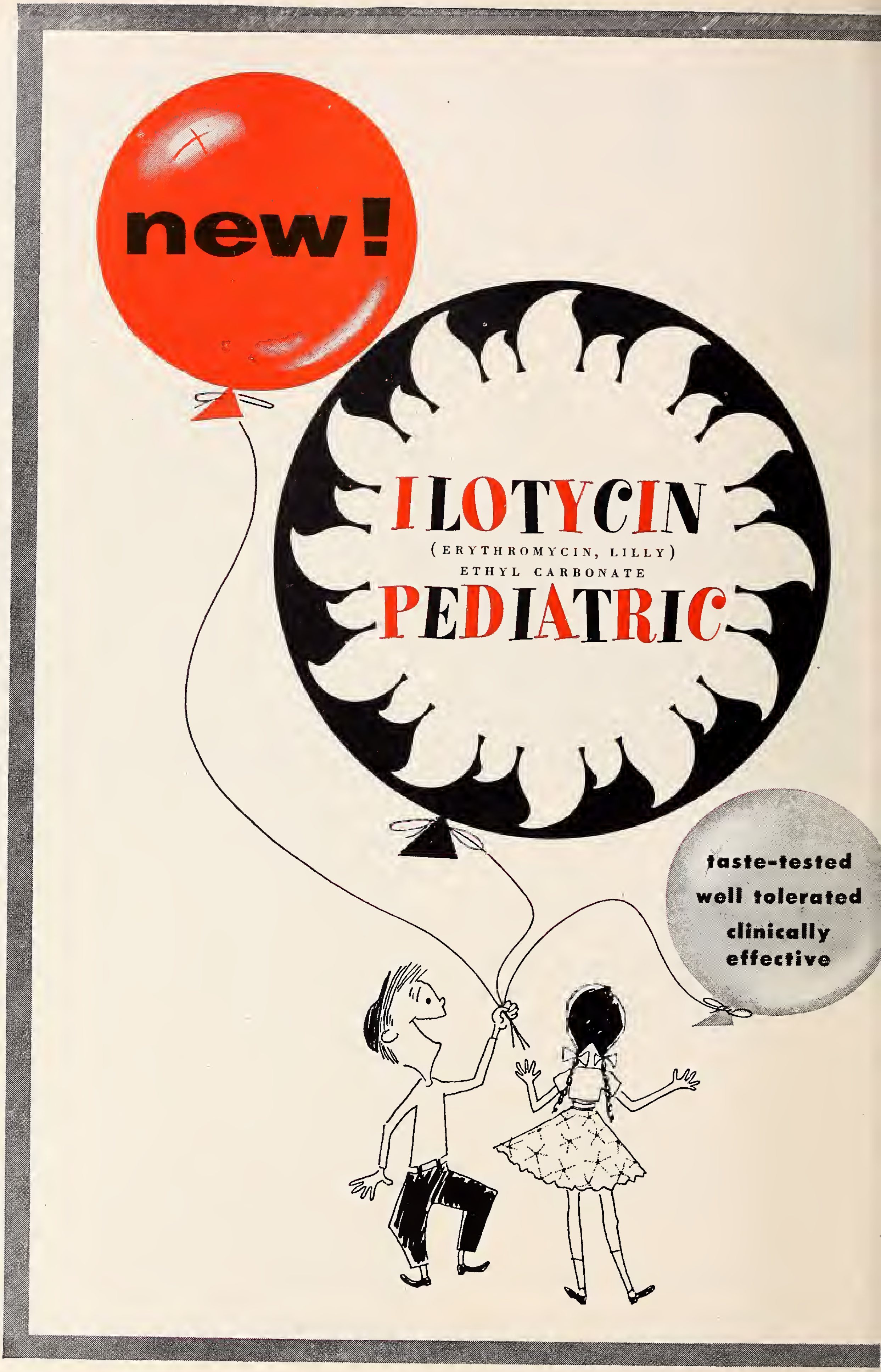
Please send me full details on the operation of your collection service.

Name ....

Address ....

City .... State ....

Division of
The I.C. System
724 Metropolitan Bldg.
Minneapolis 1, Minn.


new!
ILOTYCIN
(ERYTHROMYCIN, LILLY)
ETHYL CARBONATE
PEDIATRIC
taste-tested
well tolerated
clinically
effective

tops for tots

For infections in children caused by staphylococci, streptococci, or both . . . the palatability, low allergenicity, and relative freedom from gastro-intestinal upsets make 'Ilotycin,' Pediatric, a prescription favorite. Youngsters (with an occasional incorrigible exception) take it without a struggle. "Tablet-shy" oldsters like it, too.

Lilly

THE ORIGINATOR
OF ERYTHROMYCIN

Formula:
Each 5 cc. (approximately one teaspoonful) contain 100 mg. 'Ilotycin' as the ethyl carbonate.

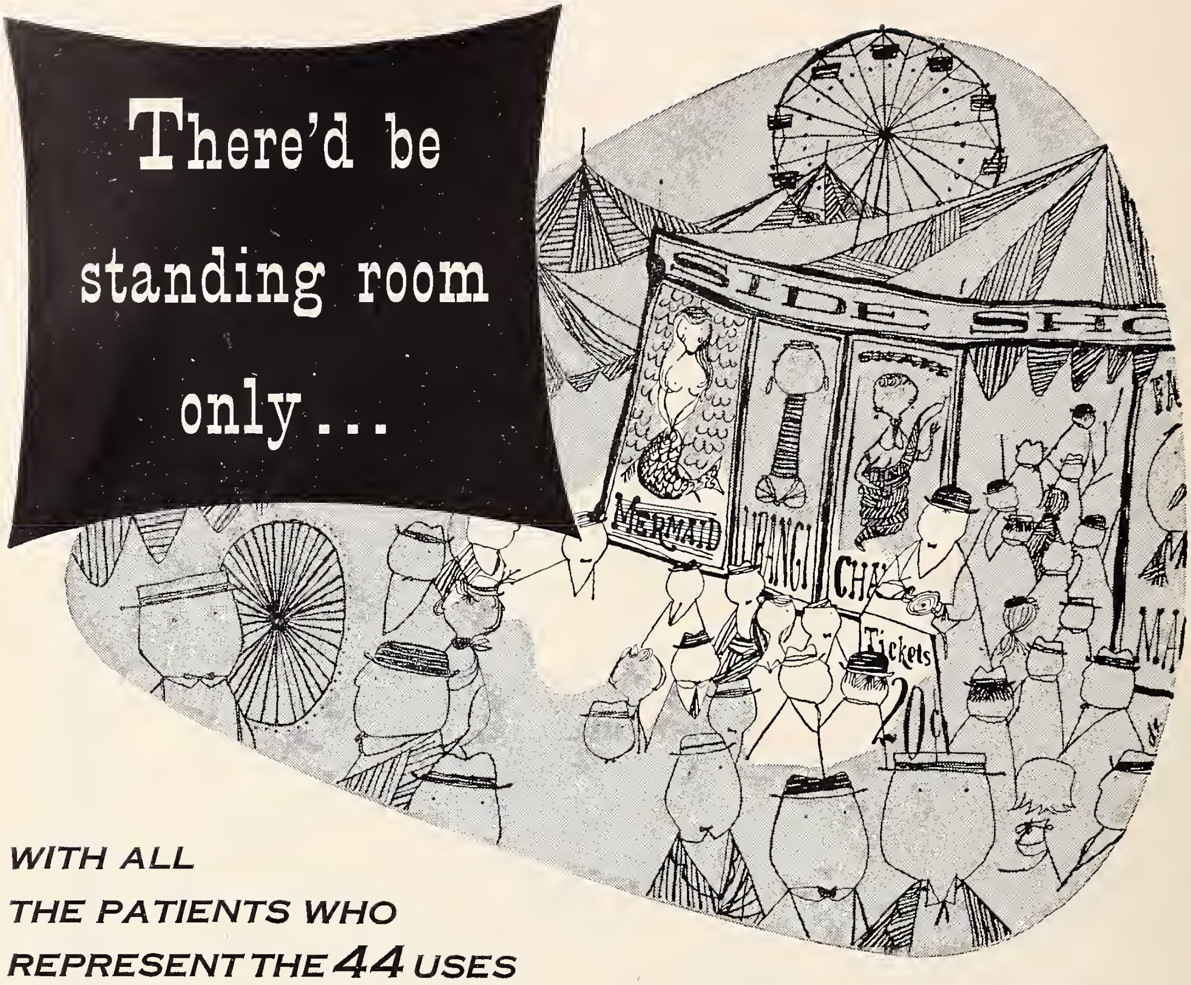
Dosage:

15 pounds—1/2 teaspoonful every six hours

30 pounds—1 teaspoonful every six hours

60 pounds—2 teaspoonfuls every six hours

How Supplied:
Each package consists of one bottle containing 1.2 Gm. 'Ilotycin' as the ethyl carbonate in a dry, pleasantly flavored mixture; 45 cc. of water are added at the time of dispensing to provide 60 cc. of an oral suspension. After mixing, the suspension is stable for two weeks at room temperature.



WITH ALL THE PATIENTS WHO REPRESENT THE 44 USES FOR SHORT-ACTING

Nembutal®

From report to report on short-acting Nembutal, these are the facts that you'll find the same:

1 *Short-acting* Nembutal (*Pentobarbital, Abbott*) *can produce any desired degree of cerebral depression—from mild sedation to deep hypnosis.*

2 *The dosage required is small—only about half that of many other barbiturates.*

3 *There's less drug to be inactivated, shorter duration of effect, wide margin of safety and little tendency toward morning-after hangover.*

4 *In equal oral doses, no other barbiturate combines quicker, briefer, more profound effect.*

All are sound enough reasons for your prescription to call for short-acting Nembutal. How many of short-acting Nembutal's 44 uses have *you* tried?

Abbott

FOR BRIEF AND PROFOUND HYPNOSIS

try the 0.1-Gm. (*1½-gr.*) Nembutal *Sodium capsule.*

1-186A

PROGRESS THROUGH RESEARCH

New Research Laboratory
of R. J. Reynolds Tobacco Company

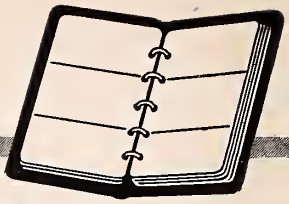
The makers of Camels never cease their efforts to maintain and to improve the standards of quality that distinguish America's most popular cigarette.

The plant shown above, which was opened this year, is a $2,000,000 addition to Camel's research facilities.

CAMEL
TURKISH & DOMESTIC BLEND CIGARETTES

R. J. REYNOLDS TOBACCO COMPANY • WINSTON-SALEM • N. C.

NOTES: TREATMENT OF ANAL PRURITUS



New!

SOOTHING, READY-TO-USE PADS REPLACE HARSH TOILET TISSUE

What are they?

Tucks are pure, soft outing flannel pads moistened and mildly medicated with a special solution containing witch hazel and glycerin.

Gentle, thorough

Being moist, Tucks clean the pruritic area completely, removing all vestiges of contaminating fecal material. Being soft, they cannot irritate sensitive anal tissue and cause further aggravation.

Majority improve

Numerous clinical reports indicate that a majority of cases of anal pruritus will show appreciable improvements when Tucks are prescribed to replace toilet tissue. Tucks have been recommended further as a prophylactic measure against all forms of anorectal disease which may be caused or aggravated by improper anal hygiene. We suggest you try Tucks for your next case of anal pruritus.

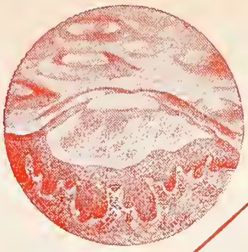
How supplied

Tucks are provided in jars of 100. A supply for trial will be sent you upon written request. Address Dept. M-3, Fuller Pharmaceutical Co., 715 So. 10th St., Minneapolis 4, Minn.

Tucks

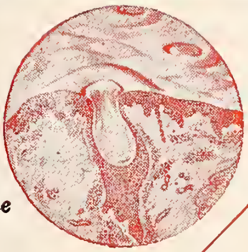
Mildly medicated cleansing cloths
Benadex • Benzocones • Hydrocil
Hydrocil Fortified • products of

fuller
PHARMACEUTICAL COMPANY



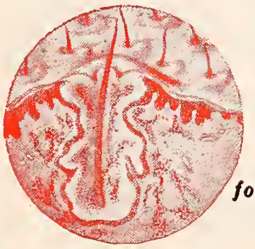
impetigo

skin infections and antibiotics

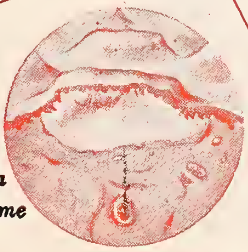


acne

pyoderma



folliculitis



erythema multiforme

Since cutaneous bacterial infections "probably account for more disability than any other group of skin diseases,"[1] the availability of broad-spectrum Terramycin has been particularly helpful in controlling these common disorders. This pure, well-tolerated antibiotic is markedly effective against the wide range of organisms often implicated as primary or secondary pathogens in skin disease. Successful clinical experience[2,3,4] in the treatment of impetigo, acne, pyodermas, erythema multiforme and other cutaneous infections recommends the selection of Terramycin as an agent of choice in common diseases of the skin. Terramycin is supplied in convenient oral and intravenous dosage forms.

1. *Bednar, G. A.: South. M. J. 46:298 (March) 1953.*
2. *Wright, C. S. et al.: A. M. A. Arch. Dermat. & Syph. 67:125 (Feb.) 1953.*
3. *Robinson, H. M. et al.: South. M. J. (in press).*
4. *Andrews, G. C. et al.: J. A. M. A. 146:1107 (July 21) 1951.*

Terramycin

BRAND OF OXYTETRACYCLINE

Pfizer

PFIZER LABORATORIES
Division, Chas. Pfizer & Co., Inc.
Brooklyn 6, N.Y.

Cordelia

ACCEPTED FOR ADVERTISING IN PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION

AWARD WINNING BRASSIERES!

Cordelia surgical brassieres have won the Blue Ribbon for five consecutive years. Now, Cordelia has won BOTH the GOLD MEDAL and BLUE RIBBON AWARDS at the 1952 California State Fair Fashion Exhibit.

When she asks...

HERE ARE THE FACTS!

Most corrective, surgical and maternity brassiere problems have been scientifically solved by the staff of Physiospecialists at Cordelia of Hollywood.

THE GOLD MEDAL WINNER!

Each Cordelia brassiere is planned and made for easy, individual fittings by experts in local stores.

THE BLUE RIBBON WINNER!

Every Cordelia brassiere is a luxury in fashion fabrics — beautifully, youthfully designed. These are the facts judges took into consideration — then awarded *Cordelia the winner!*

Prescribe

Cordelia®

OF HOLLYWOOD BRASSIERES

3107 Beverly Blvd.
Los Angeles 57, Calif.
DUnkirk 3-1365

California's leading creator and manufacturer of scientifically designed surgical, corrective, maternity and style brassieres.

Originators of the famous "Control-Lift" design

"Control Lift" Brassieres Available at These Stores

Duluth — The Silhouette Shop, c/o Albenberg's

Elk River—Barsness Variety

Hibbing—Corbett Corset Shop

Lamberton—Kluegel Dry Goods Dept.

Mankato—L. Salet & Son

Minneapolis—
- Angela's St. Louis Pk.
- The Dayton Co.
- Katherine K Corset Shop
- Shirley's Maternity Fashions

Rochester—
- C. F. Massey Co.
- Peggy's Uniform Shop

Saint Paul—
- The Golden Rule

Virginia—Jarmin's, Inc.

BARDEX
12
BARDEX
12
BARDEX
18
BARDEX
12

BARDEX BALLOON
CATHETERS

"The Accepted Standard of Excellence"

Durable Balloons for strength and symmetrical distention
Large Eyes & Lumen to provide maximum drainage
Shorter Tips to reduce bladder irritation
Uniform Shaft for accurate sizing

stocked and distributed by

HYSICIANS AND HOSPITALS SUPPLY CO., Inc.
00 HARMON PLACE, MINNEAPOLIS 3, MINNESOTA

NEW! Current MEDICAL BOOK GUILD Selections

ANY TWO OF THESE MEDICAL BOOKS $9.45 Only

(Value up to $19.50 in publishers' editions)

If You Join
The MEDICAL BOOK
GUILD Now!

WHY WE MAKE THIS UNUSUAL OFFER

The MEDICAL BOOK GUILD OF AMERICA—the *only* Book Club exclusively for the medical profession—was founded a short time ago. The enthusiastic response was most gratifying. These are the types of books GUILD members are offered each month. We offer you any two *for only $9.45* PLUS FREE MEMBERSHIP—because we want you *to prove to yourself* that you can get practical, up-to-date, authoritative medical books at *substantial savings.*

NATIONALLY FAMOUS EDITORS

The MEDICAL BOOK GUILD offers you *newly-published* books in all specialties—selected by an editorial board that is eminently qualified—*Dr. Morris FISHBEIN,* Chairman; *Dr. L. T. COGGESHALL,* Dean, Division of Biological Sciences, University of Chicago; *Dr. Wilburt C. DAVISON,* Dean of the School of Medicine, Duke University; *Dr. Chauncey D. LEAKE,* Vice-President of University of Texas, Medical Branch; and *Dr. Arthur OSOL,* Director of Chemistry Department, Philadelphia College of Pharmacy and Science.

TAKE AS FEW AS 4 BOOKS IN 2 YEARS

You pay no dues of any kind. You do not even have to take a book every month. Just 4 books in twenty-four months—yes, only 4 books during your first two years as a member—are all you agree to purchase! You buy *only the books you want*—when you want them. Many of the GUILD selections are books you'd probably buy anyway at their regular retail price. Why not join now—get the special member's price—and begin to enjoy member's bargain privileges.

SEND NO MONEY—JUST MAIL COUPON

Accept this special introductory offer now. We will send you any two books you choose from this page—value up to $19.50 in publishers' editions—but we will bill you *only $9.45* (we pay postage). Thereafter you will receive the GUILD'S "New-Book Bulletin" describing the forthcoming selection. But remember: *take only the books you want—when you want them.* If not completely satisfied with your two introductory books, return them and your membership will be canceled without further obligation. *You take no risk* whatsoever, so mail your coupon today. The MEDICAL BOOK GUILD OF AMERICA, Garden City, New York.

CHOOSE ANY 2 BOOKS YOU WANT—THEN MAIL THE COUPON BELOW!

SURVEY OF CLINICAL PEDIATRICS—L. B. Slobody, M.D. A concise, inclusive outline reference for the GP. Covers all important aspects with emphasis on the child as a whole. Also valuable preparatory aid for Board Exams. Publisher's edition, $7.50.

Blakiston's **NEW GOULD MEDICAL DICTIONARY**—The new "standard" in medical dictionaries that incorporates all recent advances in medicine and allied fields. "An exceedingly useful tool" (J.A.M.A.). Publisher's edition, $9.50.

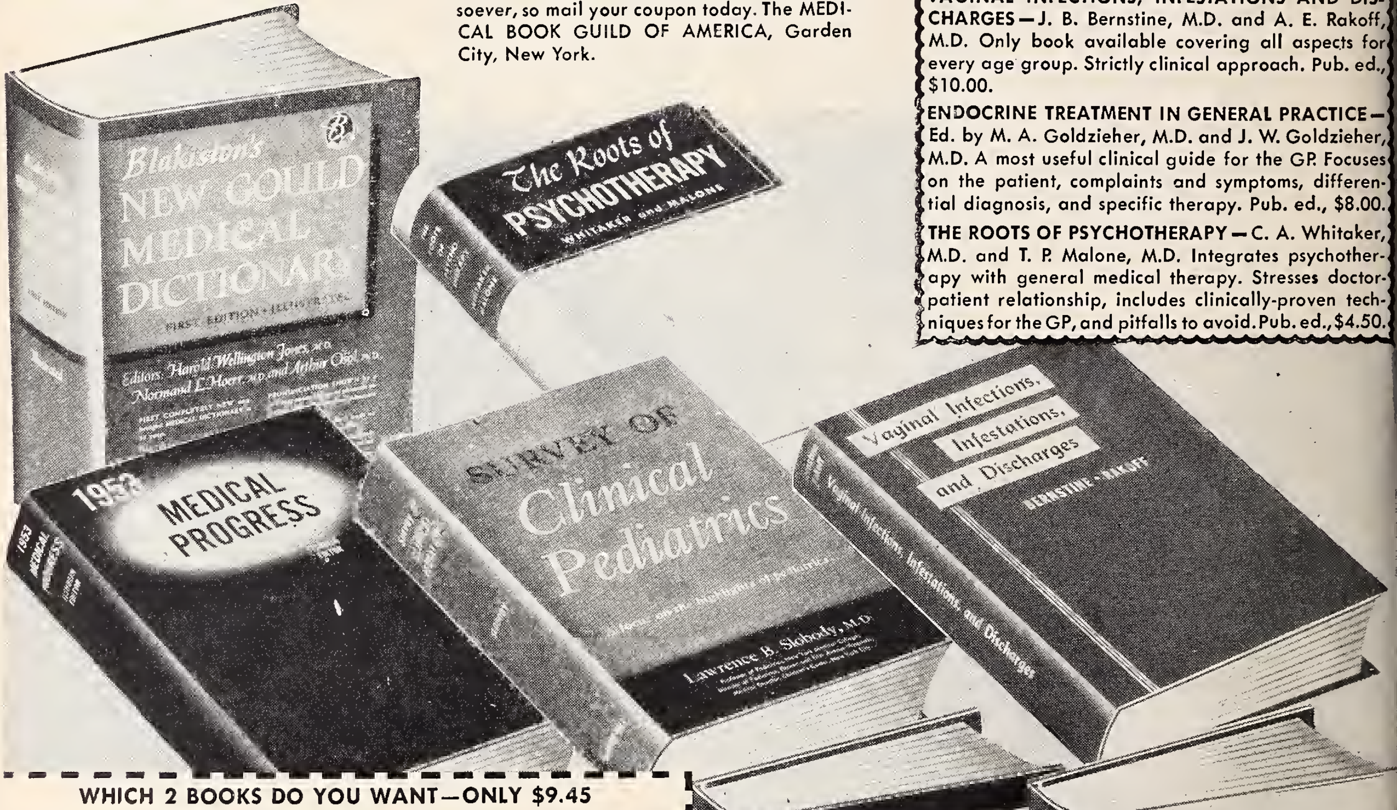
1953 MEDICAL PROGRESS ANNUAL—Ed. by M. Fishbein, M.D. (Formerly Ed. J.A.M.A.). Significant advances in research, diagnosis, treatment and trends in the past year. Sections by outstanding contributor-specialists. Publisher's edition, $5.00.

PAIN SENSATIONS and REACTIONS—J. D. Hardy, Ph.D., H. G. Wolff, M.D., and H. Goodell, B.S. A comprehensive review of traditional concepts and the newer data on the ever-important subject of pain. Another outstanding contribution. Pub. ed., $6.50.

VAGINAL INFECTIONS, INFESTATIONS AND DISCHARGES—J. B. Bernstine, M.D. and A. E. Rakoff, M.D. Only book available covering all aspects for every age group. Strictly clinical approach. Pub. ed., $10.00.

ENDOCRINE TREATMENT IN GENERAL PRACTICE—Ed. by M. A. Goldzieher, M.D. and J. W. Goldzieher, M.D. A most useful clinical guide for the GP. Focuses on the patient, complaints and symptoms, differential diagnosis, and specific therapy. Pub. ed., $8.00.

THE ROOTS OF PSYCHOTHERAPY—C. A. Whitaker, M.D. and T. P. Malone, M.D. Integrates psychotherapy with general medical therapy. Stresses doctor-patient relationship, includes clinically-proven techniques for the GP, and pitfalls to avoid. Pub. ed., $4.50.


Blakiston's NEW GOULD MEDICAL DICTIONARY
FIRST EDITION • ILLUSTRATED
The Roots of PSYCHOTHERAPY
WHITAKER and MALONE
1953 MEDICAL PROGRESS
SURVEY OF Clinical Pediatrics
Lawrence B. Slobody, M.D.
Vaginal Infections, Infestations, and Discharges
BERNSTINE • RAKOFF

WHICH 2 BOOKS DO YOU WANT—ONLY $9.45

If You Join The *Medical Book Guild* Now

Medical Book Guild of America, Publishers
Dept. 8MM, Garden City, N. Y.

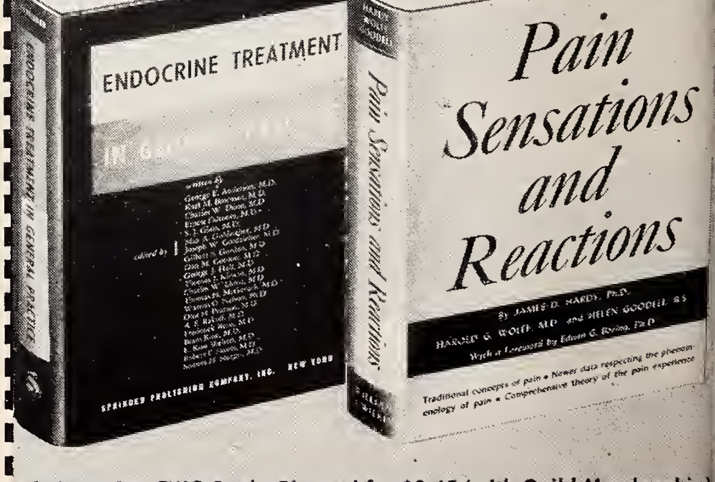
Yes! You can enroll me as a member. Send me at once, postpaid, the two books I have checked—and bill me ONLY $9.45 FOR BOTH.

☐ Survey of Clinical Pediatrics
☐ New Gould Medical Dictionary
☐ 1953 Medical Progress Annual
☐ Pain Sensations and Reactions
☐ Vaginal Infections, Infestations and Discharges
☐ Endocrine Treatment in General Practice
☐ Roots of Psychotherapy

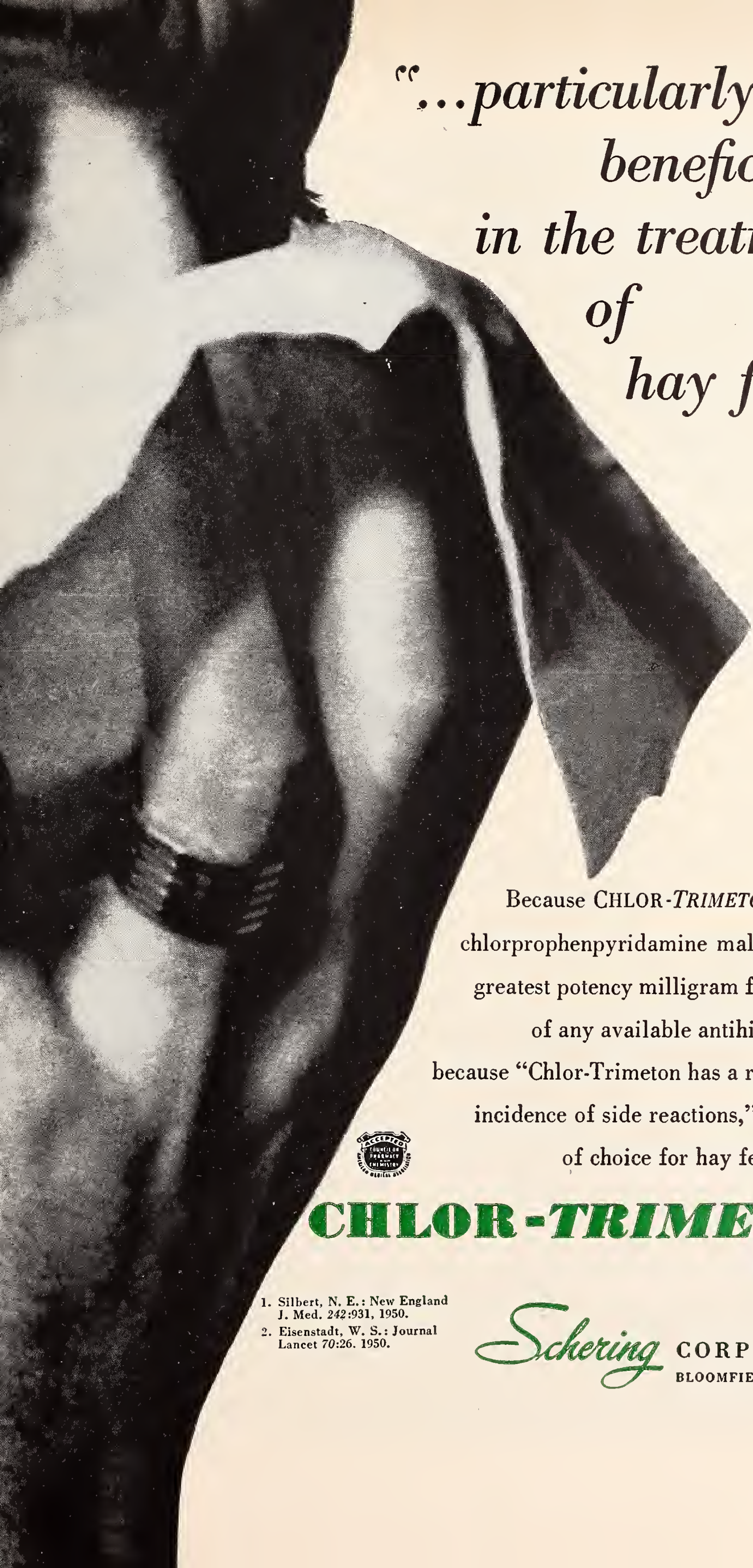
The purchase of books is entirely voluntary on my part. I may notify you in advance if I do not wish to take the next selection. I am not obligated to take more than 4 books in 24 months of membership. I pay nothing except the price of each selection I accept regardless of the publisher's higher prices—and the GUILD pays postage.

Dr. ....
(Please Print)
Address ....
City .... Zone .... State ....

NO-RISK GUARANTEE: If not completely satisfied, return both books within 10 days and this membership will be canceled.


ENDOCRINE TREATMENT
ENDOCRINE TREATMENT IN GENERAL PRACTICE
Pain Sensations and Reactions
By JAMES D. HARDY, PH.D., HAROLD G. WOLFF, M.D. and HELEN GOODELL, B.S.

Choice – Any TWO Books Pictured for $9.45 (with Guild Membership)



"...particularly beneficial in the treatment of hay fever."[1]

Because CHLOR-*TRIMETON*® maleate, chlorprophenpyridamine maleate, has the greatest potency milligram for milligram of any available antihistamine, and because "Chlor-Trimeton has a relatively low incidence of side reactions,"[2] it is a drug of choice for hay fever patients.

ACCEPTED COUNCIL ON PHARMACY AND CHEMISTRY AMERICAN MEDICAL ASSOCIATION

CHLOR-*TRIMETON*

maleate

Schering CORPORATION

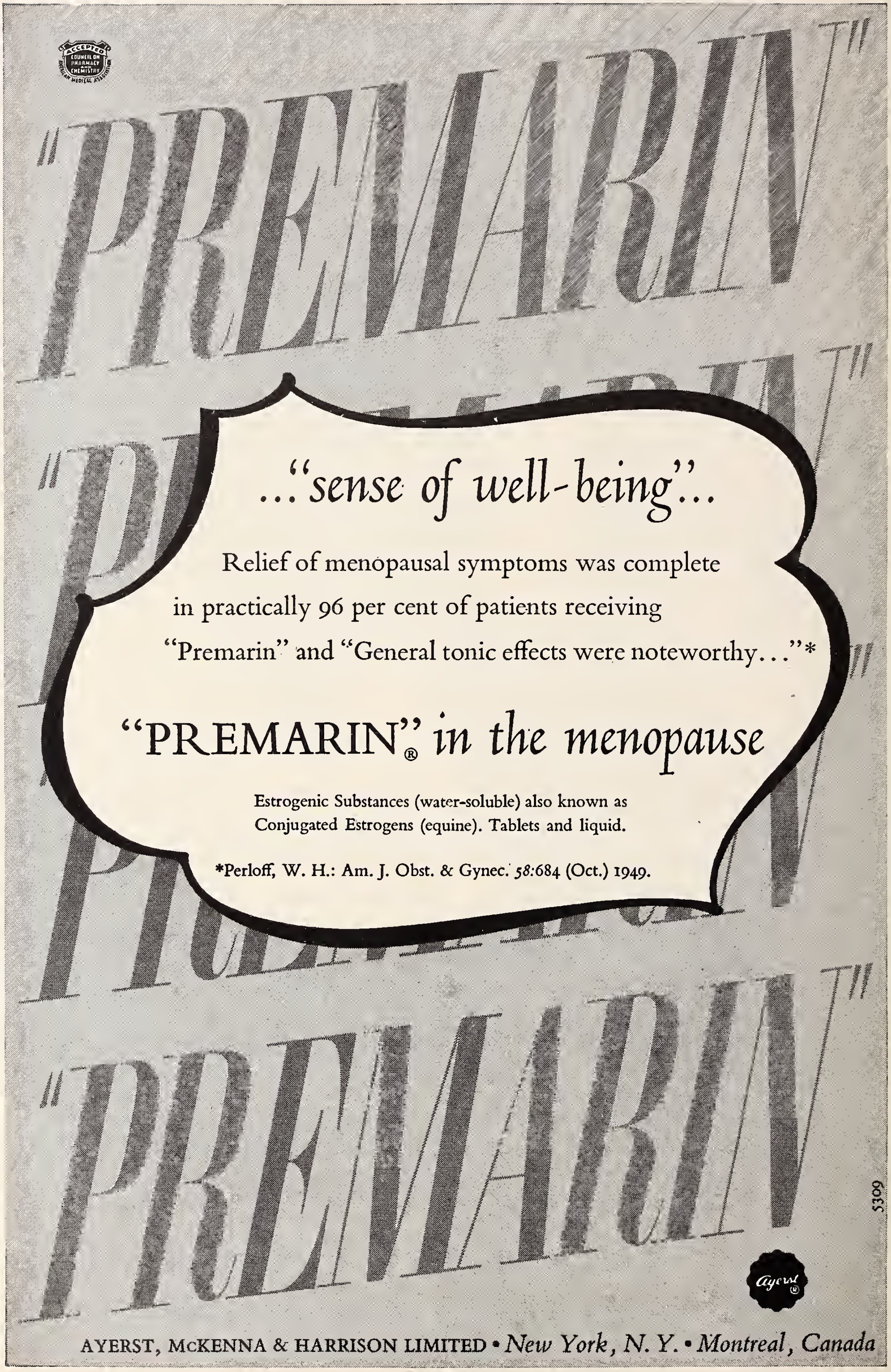
BLOOMFIELD, NEW JERSEY

CHLOR-TRIMETON

SCHERING

---

1. Silbert, N. E.: New England J. Med. *242*:931, 1950.
2. Eisenstadt, W. S.: Journal Lancet *70*:26, 1950.


"PREMARIN"
"PREMARIN"
"PREMARIN"
"PREMARIN"

...''sense of well-being''...

Relief of menopausal symptoms was complete in practically 96 per cent of patients receiving "Premarin" and "General tonic effects were noteworthy..."*

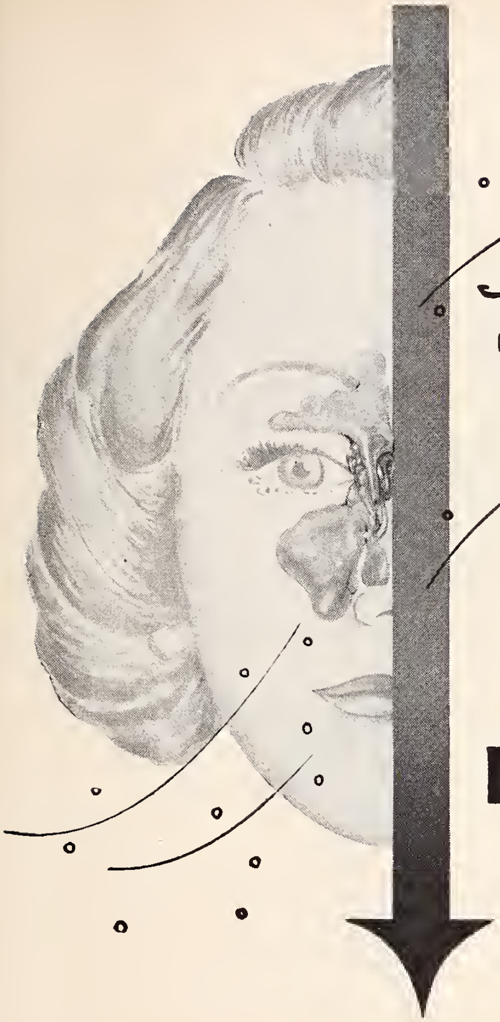
"PREMARIN"® in the menopause

Estrogenic Substances (water-soluble) also known as Conjugated Estrogens (equine). Tablets and liquid.

*Perloff, W. H.: Am. J. Obst. & Gynec. 58:684 (Oct.) 1949.

5309

AYERST, McKENNA & HARRISON LIMITED • *New York, N. Y.* • *Montreal, Canada*



To open congested air passages in hay fever

NEO-SYNEPHRINE®

HYDROCHLORIDE

. . . reduces nasal engorgement . . .

. . . promotes aeration . . . encourages drainage

A few drops of Neo-Synephrine 0.25% in each nostril will promptly check mucosal engorgement and hypersecretion, promoting greater breathing comfort over a period of several hours.

The resultant relief to the hay fever sufferer is decidedly gratifying. Prolonged action of Neo-Synephrine makes fewer applications necessary, consequently longer periods of rest and sleep are possible.

Neo-Synephrine does not lose its effectiveness on repeated application and may, therefore, be relied upon to give relief throughout the hay fever season.

Neo-Synephrine is practically free from sting and compensatory congestion; does not appreciably inhibit ciliary activity. Neo-Synephrine has been found relatively free from systemic side effects such as nervous excitation, cardiac reaction or insomnia even when tested on hypertensive, cardiac and hyperthyroid patients.[1]

Supplied in 0.25% solution (plain), bottles of 1 oz., 4 oz. and 16 oz.; 0.25% solution (aromatic), bottles of 1 oz. and 16 oz.; 0.5% solution, bottles of 1 oz.; 1% solution, bottles of 1 oz., 4 oz. and 16 oz.; 0.125 (1/8)% solution, bottles of 1/2 oz.; 0.5% water soluble jelly, in 5/8 oz. tubes.

Winthrop-Stearns INC.
NEW YORK 18, N. Y. WINDSOR, ONT.

---

[1] Von Alyeo, O. E., and Donnelly, Allen: *Arch. Otolaryng.*, 49:234, Feb., 1949.

Neo-Synephrine, trademark reg. U.S. & Canada, brand of phenylephrine.

When you suspect antibiotic hypersensitivity

ALWAYS CONSIDER

ERYTHROCIN*

...A SELECTIVE ANTIBIOTIC

ORALLY EFFECTIVE

against staphylococci, streptococci and pneumococci —especially indicated when patients are allergic to penicillin and other antibiotics or when the organism is resistant.

A DRUG OF CHOICE

against staphylococci—because of the high incidence of staphylococcal resistance to other antibiotics.

A DRUG OF CHOICE

because it does not materially alter normal intestinal flora; gastrointestinal disturbances rare; no serious side effects reported.

ADVANTAGEOUS

because the special acid-resistant coating developed by Abbott—and Abbott's built-in disintegrator—assure rapid dispersal and absorption in the upper intestinal tract.

Use ERYTHROCIN

in pharyngitis, tonsillitis, scarlet fever, pneumonia, erysipelas, osteomyelitis, pyoderma and other indicated conditions.

Abbott

*Trade Mark
Erythromycin, Abbott, *Crystalline*

E. R. SQUIBB & SONS 745 FIFTH AVENUE, NEW YORK 22, NEW YORK

Dear Doctor:

℞
Tolserol Tabs. 0.5 gram
Disp. #100
Sig: One tablet 3 to 5 times a day. Take after meals or with 1/3 glass of milk.

Usually Inadequate

This prescription is typical of many written for Tolserol Tablets*, as seen in a recent prescription survey.

Although some patients will respond to such low dosage, much better results can be obtained by following the recommended dosage: 1 to 3 grams, 3 to 5 times per day.

In accordance with this recommendation, the first dosage schedule for a patient could be:

℞
Tolserol Tabs. 0.5 gram
Disp. #100
Sig: Two tablets 3 to 5 times a day. Take after meals or with 1/3 glass of milk.

Better

Complete information on the use of Tolserol in muscle spasm of rheumatic disorders, neurologic disorders, and acute alcoholism is available from your Squibb Professional Service Representative.

Sincerely yours,

L. H. Ashe

L. H. Ashe, Manager
Professional Service Dept.

'TOLSEROL' IS A REGISTERED TRADEMARK

*Squibb 'Mephenesin'

IN SUMMER

ALLERGIES...

transform discomfort

into well-being

Such a transformation initiated by Neo-Antergan enables many allergy patients to live comfortably through difficult Summer months when pollen levels soar.

By effectively blocking histamine receptors, Neo-Antergan brings significant symptomatic relief with a minimum of undesirable physiologic effects.

Promoted exclusively to the profession, Neo-Antergan is available only on your prescription.

Your local pharmacy stocks Neo-Antergan Maleate in 25 and 50 mg. coated tablets in bottles of 100, 500, and 1,000.

The Physician's Product

Neo-Antergan®

MALEATE
(PYRILAMINE MALEATE)

COUNCIL ACCEPTED

Research and Production
for the Nation's Health

MERCK & CO., INC.
Manufacturing Chemists
RAHWAY, NEW JERSEY

© Merck & Co., Inc.

The Secret of Sleep
in a Capsule

A dose of 'Seconal Sodium' at bedtime gently breaks the chain of wakeful nights and permits the patient to begin again to enjoy natural, normal sleep. The onset of action is prompt; the duration is short. The next morning the patient is refreshed, ready to begin the day with renewed vigor and strength.

Available in 1/2, 3/4, and 1 1/2-grain pulvules.

Eli Lilly and Company
Indianapolis 6, Indiana, U.S.A.

in the new-style parabolic-end capsules

Lilly

good night, good sleep, good rest with

PULVULES

'Seconal Sodium'

(SECOBARBITAL SODIUM, LILLY)

Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 36 **August, 1953** **Number 8**

THE USE OF RADIOISOTOPES IN TREATMENT

J. E. RALL, M.D., Ph.D.
New York, New York

THE WIDESPREAD use of radioisotopes in research represents one of the major advances in investigative techniques in several decades. The use of radioisotopes for treatment, however, is so difficult that great and important successes have been attained with only one isotope in the treatment of one disease.

Radioisotopes differ from non-radioactive elements in their instability which can only be relieved by the emission of some type of radiation and consequent transformation into another isotope. Hence, treatment with radioisotopes is really treatment with radiation. Radiation is a relatively old weapon of destruction, but in spite of much investigation and use, surprisingly little is known of how radiation can kill living tissue with a most astonishing efficiency. It can be calculated that a fatal dose of whole body x-ray, if it were entirely changed into heat would warm a man less than 1.0° Centigrade. This is certainly a frightening kind of efficiency. Ionization in the nucleic acids, disturbing the orderly synthesis and degradation of these most necessary cellular elements, is probably the mechanism by which such a deadly effect is obtained.

In the past, the naturally occurring radioisotopes of radium and x-rays have constituted the means of obtaining the radiation. Since radium decays into the gas, radon, it is a somewhat inconvenient material to manipulate and it has been suggested that, had the present gamut of radioisotopes been available when radiation was first discovered, radium would have been the element least likely to be used for its radiation.[5] Since radioisotopes can be used for treatment only because of the radiation they emit, let us first discuss the application of radioisotopes to conventional radiotherapy, secondly describe the possible use of radioisotopes by selective localization, and, finally, using as an example the treatment of carcinoma of the thyroid with radioiodine, examine the problems in the use of radioisotopes when selective localization is attempted.

I. The Application of Radioisotopes to Conventional Radiotherapy

With the incredibly complete arsenal of radioisotopes now provided it is possible to obtain any type of radiation with any degree of penetrating power one desires.

(a) *Radioisotopes as a substitute for X-ray treatment.*—It is now possible to obtain such very large quantities (2,000 curie sources) of radioisotopes which emit energetic gamma rays that the isotope can be heavily shielded and a beam of radiation directed toward a patient several feet away. There are certain technical and economic advantages to such a unit and several using cobalt 60 are now in use.[2] Cesium and iridium are also suitable for such a use and units utilizing these isotopes are under construction or in use.[4] It is also possible to utilize gamma radiation from these sources to take diagnostic radiographs. Except for independence from electric power

---

Dr. Rall is Associate Member of the Sloan-Kettering Institute, New York, New York.

From the Department of Clinical Investigation of Sloan-Kettering Institute and Memorial Center, New York, N. Y.

Read at the Centennial Meeting of the Minnesota State Medical Association, St. Paul, Minnesota, May 19, 1953.

sources, there are few advantages to the use of radioisotopes in this manner.

(b) *Radioisotopes as a substitute for superficial radiation.*—Radioisotopes can be obtained which emit only beta particles. They may be used absorbed in blotting paper or in any of a wide variety of applicators. Used this way they are considerably more efficient and are easier to handle than soft x-ray. Phosphorus 32 which is a pure beta emitter enjoys considerable popularity for this purpose.

(c) *Radioisotopes as a substitute for radium.*—Radioisotopes with strong gamma radiation may be used as solutions, as suspensions and as metals. This is a great advantage over the use of radium which has such a complicated decay scheme and which includes a gas as one of its products. Cobalt is particularly suited for use when needles or unusually shaped devices more efficiently and completely irradiate a desired area. Cobalt can be molded into any shape desired, irradiated in a reactor and almost any degree of radioactivity obtained. The finest individualization of each patient's particular problem is secured.

Gold 198 in colloidal suspension may be used somewhat differently. It may be injected into a tumor mass whose limits cannot be well defined or which involves essential structures that cannot be sacrificed surgically.[6] It has, for example, been used for the treatment of cancer of the prostate by injection directly into the area where the tumor lies.[3] This appears to be one of the more promising additions to the therapy of inoperable cancer.

(d) *Radioisotopes for intracavitary radiation.*—Patients with widespread peritoneal or pleural metastases frequently accumulate large amounts of fluid in these spaces and fluid accumulation and the results of repeated withdrawal of fluid cause the most distressing symptoms. The introduction of a radioactive material directly into the cavity frequently is a valuable palliative measure when it decreases or prevents further fluid accumulation. Gold 198, albumen labeled with iodine 131, chlorine 38 and krypton 87 have been used in this manner after the limit of tolerance by the skin to external radiation has been reached.[9,13] Cure of such cancers treated in this manner cannot be expected but valuable symptomatic relief is frequently obtained.

Another variation of this technique has been explored for the treatment of certain types of cancer of the bladder. A balloon is inserted in the bladder and filled with an isotope such as sodium 24 and any amount of radiation will then be conveniently administered.[14]

These uses of radioisotopes as just detailed, to supplant and extend radiation as it has been previously employed, are not spectacular but are of real utility. Furthermore, these uses will probably prove to be the main field in which radioisotopes will be employed in medical therapy. The dream of the physicists of the last decade was much more hopeful and had it materialized, would have revolutionized therapy. The hope entertained was that a substance could be found which would accumulate in tissue in high concentration and be retained there for a long time. Labeling of the substance with a radioisotope would then permit selective and destructive radiation of the tissue involved while the host was spared. This dream took two forms as follows:

II. (a) Concentration of Elements in Biological Systems

The more complex forms of life have learned to take advantage of the differing chemical properties of the elements and use some elments only for certain purposes. It is occasionally possible to capitalize upon this fact and substitute a radioactive isotope for the naturally occurring element. The classical situation is the thyroid gland and its undying affection for iodine. The use of iron as the respiratory pigment and of calcium for skeleton are examples of other uses of an element for either a single or a major purpose.

The outstanding example of the successful use of a radioisotope in treatment is, of course, the use of iodine 131 in the treatment of hyperthyroidism. The reasons for this success are the remarkable affinity of the thyroid for iodine, the relative scarcity of iodine in the diet, and the unusually long time that any iodine atom remains stored in the thyroid. These, and other considerations will be examined in more detail when we recount the problems in using iodine 131 for the treatment of cancer of the thyroid, since such treatment more clearly illustrates the general problems that are met in the attempted use of any radioisotope for treatment when we administer the isotope internally.

Phosphorus is concentrated to a certain extent in bone marrow and has been used in the treatment of polycythemia vera and leukemia. Unfortunately it does not selectively damage either the erythropoietic or the leukopoietic systems and its use, particularly in leukemia, results in little more than general body radiation. Many hematologists, however, consider that phosphorus 32 is the treatment of choice in polycythemia vera.

The use of neutron induced radiation is an interesting variant of this technique. Javid has presented the theoretical considerations that are involved in the use of boron in the treatment of brain tumor.[7] When boron is exposed to a high flux of neutrons of a certain energy it captures the neutrons with an efficiency greatly exceeding that of the elements normally present in tissue. Boron then becomes boron 11 which disintegrates very rapidly into lithium with the emission of a very energetic alpha particle. The radiation from the alpha particles is highly destructive. The limitation in this method of treatment is the degree of localization of boron that can be achieved in the tumor. Furthermore, a high intensity source of neutrons which is only found in a reactor, is necessary. The advantage of this technique is that localization of boron in tissues other than those exposed to the neutron beam is of no consequence. The usefulness of this rather complicated procedure has yet to be fully evaluated.

II. (b) Concentration of Organic Compounds in Biological Systems

Most organic compounds are metabolized by the human organism in an extremely widespread and complex fashion. Certain compounds, however, are handled in a specific manner by specific tissues. Tetraiodophenolphthalein, for example, is secreted into the bile by the liver in a most rapid and efficient manner. The second dream of many investigators has been to develop a compound that will be localized in any given tissue in a very high concentration so that this compound may be labeled with a radioisotope and selective radiation accomplished. A study has actually been made of tetraiodophenolphthalein labeled with iodine 131 for the treatment of cancer of the gall bladder.[1] Unfortunately no definite therapeutic results were obtained. Amino acids known to be used by rapidly growing tissues have been studied as have purines used in the synthesis of nucleoproteins. A large body of important information regarding the metabolism of normal and neoplastic tissues has been obtained but it appears more and more certain that tumors utilize the same compounds in synthesis that normal tissue does and any biologically useful organic brick will be used for construction both by tumor and by normal tissues.

A somewhat different approach has been investigated very carefully by Pressman and his associates.[8] They first found that antibodies could be labeled with a radioisotope (sulphur 35 and iodine 131 were used) and retain their biological activity. They then found that tissue antibodies actually localized to a certain extent in the tissue against which they were prepared. Now they have found that chemical purification of the globulin fraction of the plasma containing the antibody caused an increased concentration of antibody in the tissue studied. The application of these studies in animals to therapy in man is a long and uncertain step and is surely one that will require some time for even preliminary evaluation. The crucial factor is the ratio of integrated tumor concentration of antibody to the integrated concentration of antibody in blood.

III. The Treatment of Cancer of the Thyroid with Radioiodine

The treatment of cancer of the thyroid with radioiodine, sometimes useless, sometimes brilliantly successful, illustrates more clearly the problems that are met with in the use of radioisotopes in such treatment. First is the problem of localization of iodine in the tumors. Cancer of the thyroid is subject to a certain degree of physiological control so there are several measures we can adopt to increase the degree of localization.[11] Figure 1 shows the results of thyroidectomy and thiouracil treatment in stimulating the uptake of radioiodine in metastases. These results are as good as can be obtained, since over 90 per cent of the isotope was finally localized in the cancer. In this particularly favorable and rather uncommon case, the problem of localization was solved, but further problems remained.

How much iodine 131 can we give this pa-

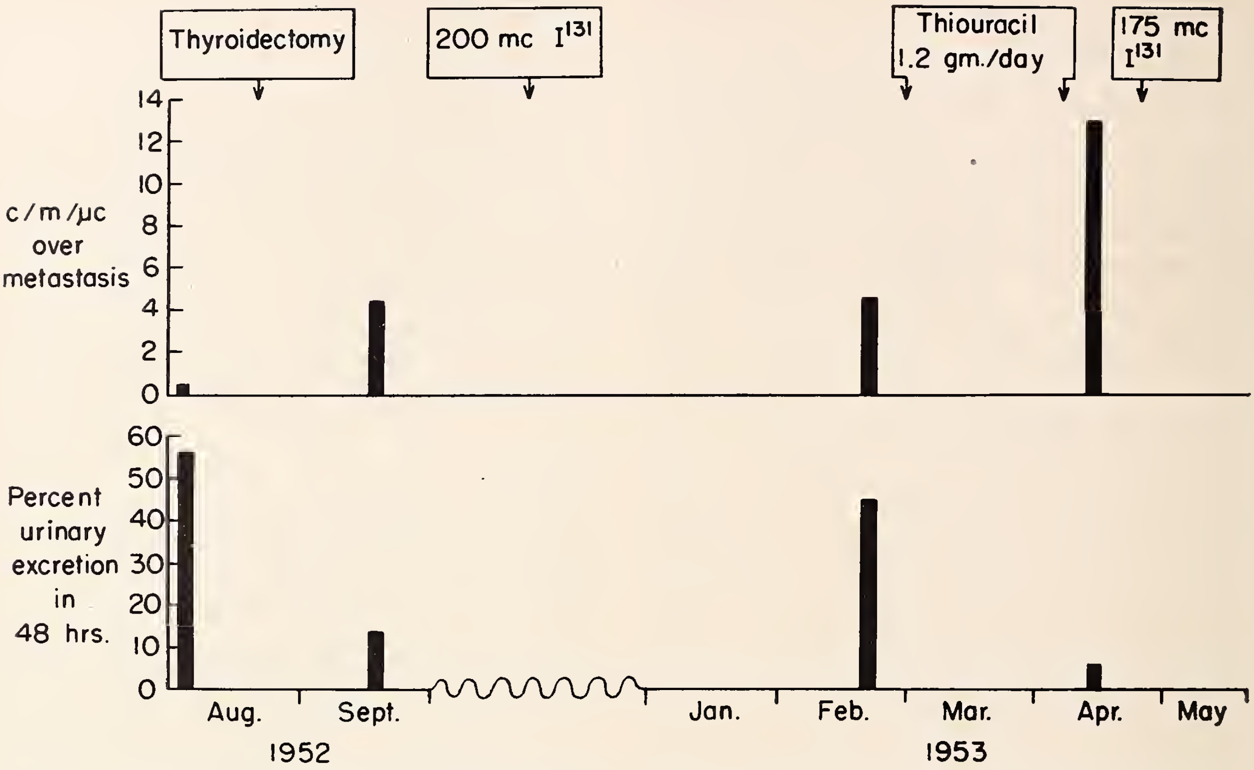


Fig. 1. The effects of thyroidectomy and thiouracil on the uptake of I^{-131} in a patient with cancer of the thyroid.

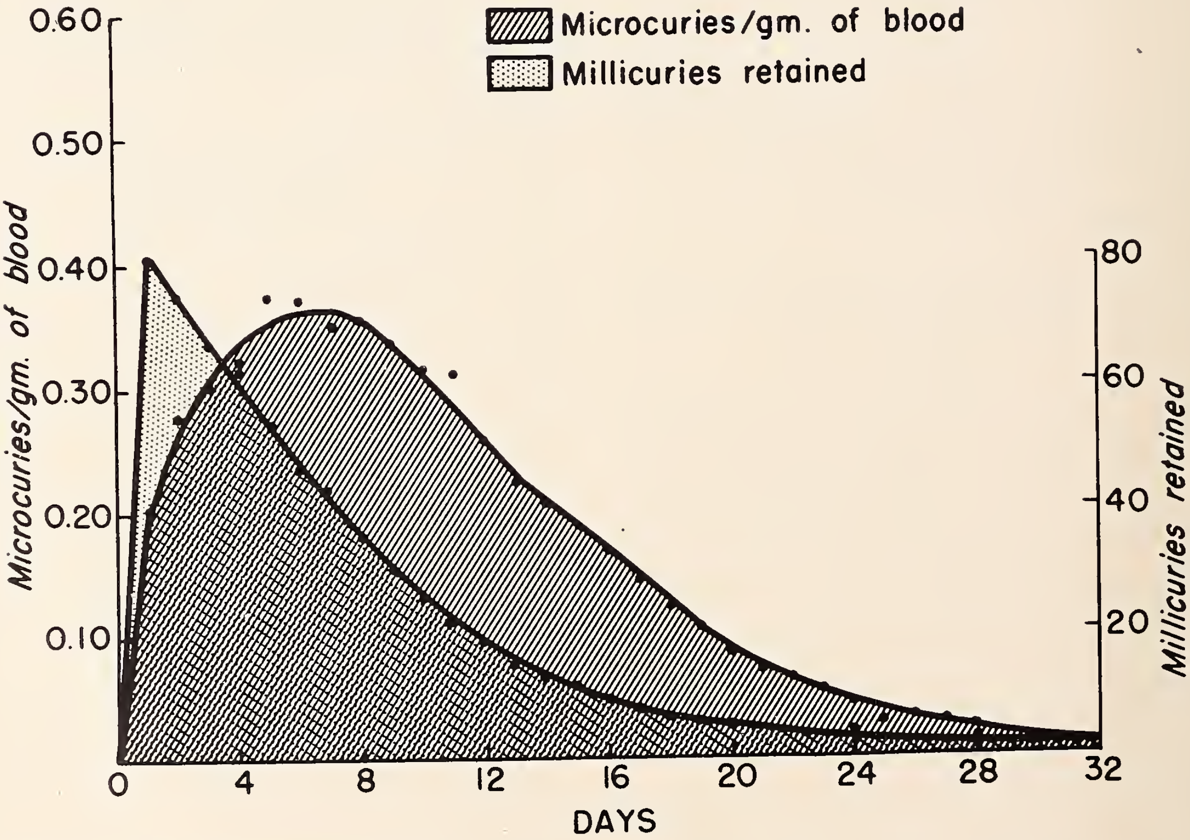


Fig. 2. The relative concentration of I^{-131} in the tumor and in the blood of a patient with cancer of the thyroid, given 107 millicuries I^{-131}.

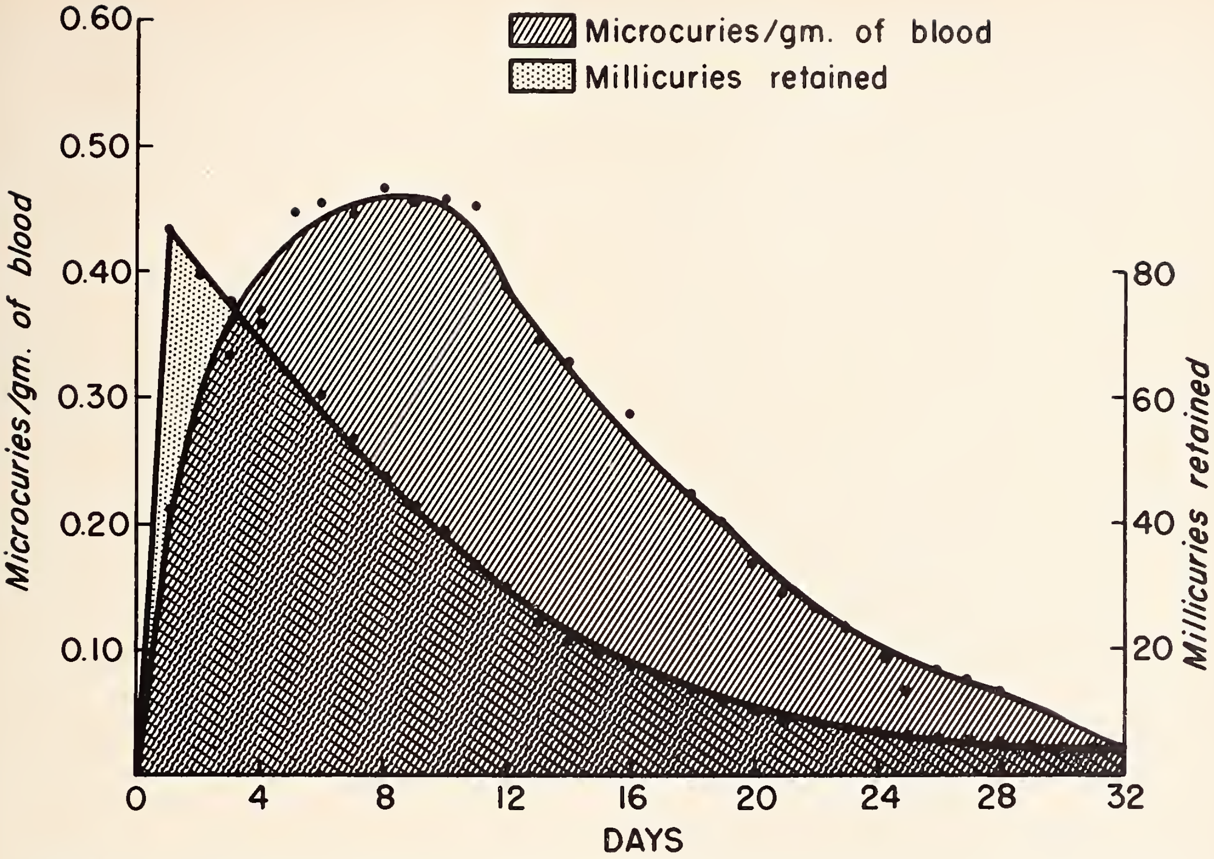


Fig. 3. The relative concentration of I-131 in the tumor and in the blood in the same patient as in Figure 2 except for change in decay rate of isotope (13 day, half life).

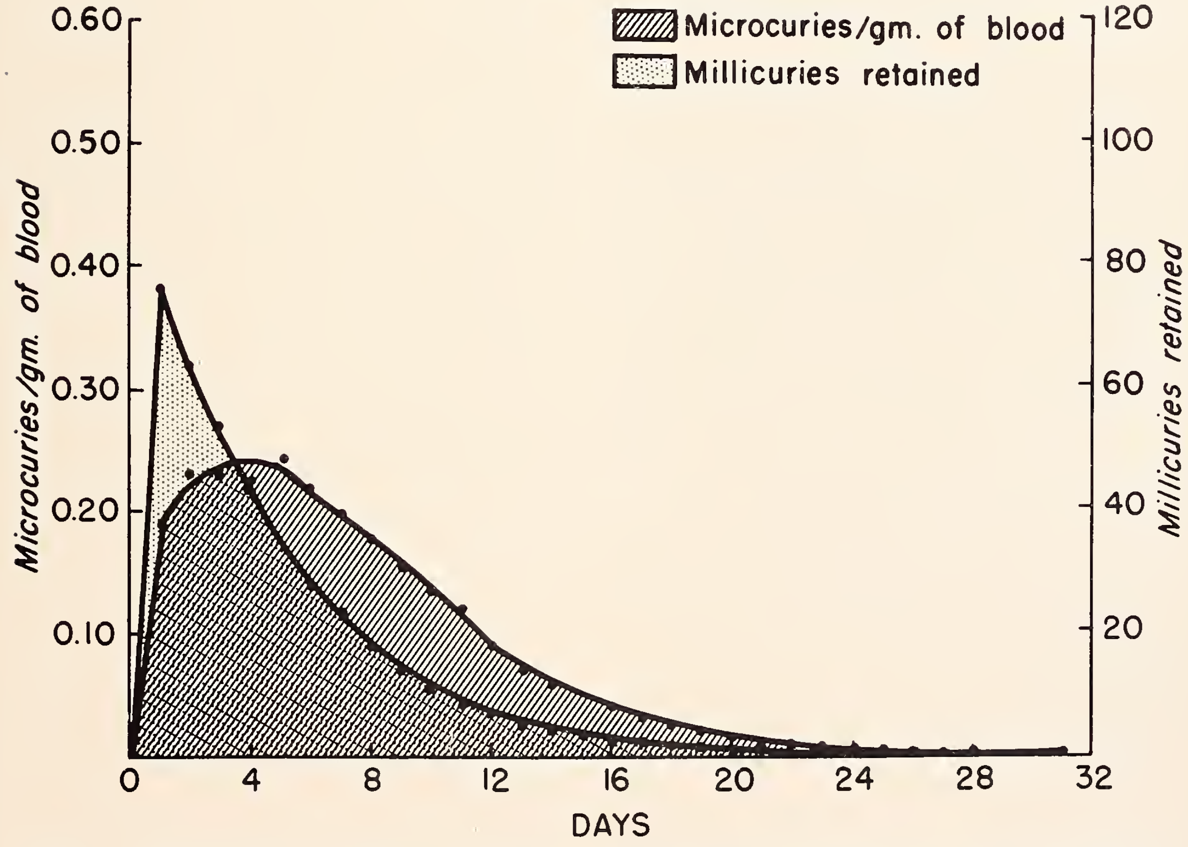


Fig. 4. The relative concentration of I-131 in the tumor and in the blood in the same patient as in Figure 2 except for change in decay rate of isotope (4 day, half life).

tient? Radiologists tell us that generally, one millicurie of radioiodine delivers about one roentgen of general body radiation and we know that the lethal dose of such radiation for man is approximately 400 r. Unfortunately we have seen several patients in whom this convenient rule failed completely. Since damage to the hematopoietic system is the most serious complication of treatment with I^{-131}, we have tried to correlate one of the more sensitive indicators of hematologic activity, depression of the level of circulating lymphocytes, with the millicuries of radioiodine administered. This results in rather inconsistent and erratic correlation. If one, however, really attempts to calculate the radiation to the blood-forming organs by using the integrated blood level of radioiodine plus a relatively small factor which takes into account the gamma radiation from iodine concentrated in the tumor, a quite satisfactory correspondence between cause (radiation) and effect (lymphocyte depression) is found. We cannot only measure the blood level of radioiodine and with somewhat less accuracy, the tumor retention of the isotope, but we can, from prior tracer study, predict these values for any given therapeutic dose. Patients with functioning carcinoma of the thyroid show a great variation in the way in which they metabolize iodine, so we find that the maximal safe dose of iodine 131 will vary for any single dose from 100 millicuries to 400 millicuries. The main reason for this difference is that some patients turn over iodine in the tumors so rapidly that the level of organic iodine in the blood rises to very high values. This organic radioiodine in the blood disappears rather slowly and meanwhile radiates the hematopoietic organs. Other patients discharge the organic iodine from the tumors into the blood stream quite slowly and the level of radioactivity in the blood is so low that a much larger dose may be tolerated.

The relationship between blood level and tumor level of isotope is complex and the precise relationship between the two will be changed by the decay rate of the isotope used. It is obvious that the most therapeutically promising situation is obtained when the area under the curve of blood level is the lowest and the area under the curve of tumor retention of isotope is the highest. Figure 2 shows these data for an actual patient with carcinoma of the thyroid and pulmonary metastases who picked up about 80 per cent of the 107 millicure therapeutic dose of I^{-131} which he was given. Figure 3 shows the relative areas under these curves if the patient had been given I^{-123} with a half-life of thirteen days and Figure 4 shows the same curves decayed with a physical half-time of four days which corresponds to the half-time of I^{-124}.

It is apparent that in this particular case the blood would have received slightly less radiation with respect to the tumor had the patient been given iodine 124. Similar calculations, assuming a twelve-hour half-life for iodine (iodine 130) suggest that the tumor dose would be very small and the blood dose quite high. There is, therefore, for each patient a particular decay rate of isotope which will result in the maximum tumor and the minimum blood radiation.

None of these calculations have taken into account the various energies of the beta rays and gamma rays emitted by these isotopes. These variations in energy will also produce changes in the blood/tumor radiation ratio. Furthermore, these calculations assume that differing rates of radiation do not affect physiologic processes involved. We know that therapeutic radiation very seriously affects iodine metabolism. If the radiation is of sufficient intensity, the release of thyroglobulin will drastically increase the blood level of radioiodine.[12]

These problems in such a relatively simple situation as radioiodine treatment of cancer of the thyroid are now, at least in part, understood but are by no means solved. The very complexity of this situation, however, points to the serious difficulties in the use of other radioisotopes from a therapeutic standpoint. Nevertheless, from the extensive experience with the use of iodine 131 for the treatment of cancer of the thyroid, the quantitative aspects of metabolism which must be met by an internally administered radioisotope for which a therapeutic effect is desired, have been delimited.

Summary

The advantages and the problems inherent in the use of radioisotopes have been described. The adaptation of radioisotopes to conventional radiotherapy is proceeding rapidly and will probably be the most useful field for radioisotope therapy. The possible use of radioisotopes for

selective destruction by localization in tumors has been discussed. The use of radioiodine in the treatment of cancer of the thyroid as a prototype for such a situation has been reviewed and the serious problems inherent in such a procedure have been mentioned.

References

1. Copher, H. G.; Wallingford, H. V.; Scott, G. W.; Zedler, G. G.; Hayward, Boyd; Moore, S.: Direct irradiation of carcinoma of the liver and biliary tract by the use of radioactive iodine (I^{-131}) in tetraiodophenolphthalein. Amer. J. Roentgenol., 67, 6:964-73 (June) 1952.
2. Dixon, W. R.; Garrett, C., and Morrison, A.: 1000 Curie Cobalt Units for radiation therapy IV. Radiation measurements with the Eldorado Cobalt 60 teletherapy unit. Brit. J. Radiol., 25:314-18 (June) 1952.
3. Flocks, R. H.; Kerr, H. D.; Elkins, H. B., and Culp, D.: Treatment of carcinoma of the prostate by interstitial radiation with radioactive gold (Au 198). A preliminary report. J. Urol., 68:510-22 (Aug.) 1952.
4. Freundlich, H. F., and Haybittle, J. G.: An improved iridium -192 teletherapy unit. Acta Radiol., 29:231-41 (Mar.) 1953.
5. Hahn, P. F., and Carothers, E. L.: The use of radioactive colloidal metallic gold in the treatment of malignancies. Nucleonics, 6:54-62 (Jan.) 1950.
6. Hahn, P. F.; Goodell, J. P. B.; Sheppard, C. W.; Cannon, R. O., and Francis, H. C.: Direct infiltration or radioactive isotopes as a means of delivering ionizing radiation to discrete tissues. J. Lab. & Clin. Med., 32:1442-53 (Dec.) 1947.
7. Javid, Manucher; Brownell, L. Gordon, and Sweet, H. William: The possible use of neutron-capturing isotopes such as Boron 10 in the treatment of neoplasms. II. Computation of the radiation energies and estimates of effects in normal and neoplastic brain. J. Clin. Investigation, 31, 6:604-11 (June) 1952.
8. Pressman, David: The zone of localization of antitissue antibodies as determined by the use of radioactive tracers. J. Allergy, 22, 5:387-96 (Sept.) 1951.
9. Mueller, J. H.: Zur medizinisch-therapeutischen Verwendung der kuenstlichen Radioaktivitaet. Bull. schweiz. Akad. d. med. Wissensch., 5:484-510, 1949.
10. Rall, J. E.; Foster, C. G.; Robbins, J.; Lazerson, R.; Farr, L. E., and Rawson, R. W.: Dosimetric considerations in determining hematopoietic damage from radioactive iodine. Am. J. Roentgenology, Radium Therapy and Nuclear Medicine. In Press.
11. Rall, J. E.; Miller, N. Wade; Foster, C. G.; Peacock, C. W., and Rawson, R. W.: The use of thiouracil in the treatment of metastatic carcinoma of the thyroid with radioiodine. J. Clin. Endocrinol., 11, 11:1273-80 (Nov.) 1951.
12. Robbins, J.; Rall, J. E.; Becker, D. V., and Rawson, R. W.: The nature of serum iodine after large doses of I^{-131}. J. Clin. Endocrinol. and Metabolism, 12, 7:856-74 (July) 1952.
13. Steinfield, Winton: Potential therapeutic use of short-lived radioactive isotopes, as chlorine –38, krypton –87. Federation Proc., 12:403, 1953.
14. Walton, R. J.: Therapeutic uses of radioactive isotopes in the Royal Cancer Hospital. Brit. J. Radiol., 23: 273:559-66.

SUBCUTANEOUS CLYSIS FOUND USEFUL IN TERRAMYCIN THERAPY

Administration of terramycin by subcutaneous clysis in infants and children, a previously unreported mode of antibiotic therapy, has been described by Farley and Konieczny† of St. Michael's Hospital, Newark, N. J. Use of the antibiotic in this fashion was considered a worthwhile therapeutic adjunct in children in whom oral or intravenous administration is contraindicated or not feasible.

Thirty-six patients from three days to four years of age received a total of 254 clyses with the intravenous form of the antibiotic. Most children were given 10 mg. per Kg. of body weight every twelve hours in a 1 mg. per cc. concentration. This concentration was considered an adequate dose offering a "wide margin of local toleration and safety." Concentrations above 5 mg. per cc. were not advised. All clyses, the authors report, were well tolerated and no untoward local or systemic reactions were observed.

Terramycin was found to be stable and compatitble in physiological saline, dilute dextrose solution or 1/6 M sodium lactate and Darrow's solution, and may be added to these solutions when they are needed for electrolyte repair.

The authors recommend a terramycin concentration of 1 mg. per cc. with a dosage of 10 mg. per Kg. of body weight every twelve hours. In more serious conditions: 20 to 25 mg. every eight to twelve hours.—Abstracted in *Currents in Infant Care,* May, 1953.

---

†Farley, W. J., and Konieczny, L.: J. Pediat., 42:177 (February) 1953.

DIAGNOSIS AND TREATMENT OF POSTPOLIOMYELITIC CONTRACTURES

MARCEL H. VANDEMOORTELE, M.D., and PAUL R. LIPSCOMB, M.D.
Rochester, Minnesota

THE diagnosis and treatment of the disease, anterior poliomyelitis, has undergone a significant evolution in the last twenty years. Early diagnosis, hospitalization, and subsequent early treatment have eliminated a great number of postpoliomyelitic complications. A fixed contracture means a deformity which, once present, cannot be corrected by conservative measures. Surgery then offers the only means of treatment. It is, therefore, of the greatest importance that in the early care of patients who experience this infection, treatment should be directed against the development of deformities. Prevention of postpoliomyelitic contractures is still one of the most important goals in the treatment of poliomyelitis.

Prevention of Contractures in the First Two Stages

Acute and Recovery Stage.—In the early treatment, rest in bed is indicated. The mattress should be firm, with boards between it and the springs. A correctly used foot board will maintain dorsiflexion of the feet and prevent shortening of the gastrocnemius and soleus muscles.[1,9]

Eventually it may be advisable to use sand bags, pillow supports, rolled towels, splints or plaster shells[13] to support and maintain the physiologic position of the muscles of the lower extremity. Tightness or spasm of the back and hamstring muscles is frequently encountered. Treatment with heat is advocated. Later on, muscle re-education and exercises should be instituted to relieve contracture or shortening of the muscles until a normal range of motion has been restored. This restoration of length of shortened or spastic muscles is essential regardless of whether or not there is demonstrable paralysis. Passive or active movements should never be carried to the point of producing pain. The aim must be to help the patient's ultimate recovery by maintaining the muscles, bones and joints in as good physiologic condition as possible.[12]

Convalescent Stage.—As soon as the patient is allowed to be up, braces are often required as temporary aids in the recovery of weakened muscles. Not only must the weakened, paralytic muscles have protection against overstretching and overwork, but the strong and often unopposed normal muscles must be supervised to prevent contractures and distortions occasioned by imbalance. This is especially true in the involved lower extremities, and braces used as supports to allow earlier ambulation must be constructed in such a way as to prevent deformities.[11,14] As a matter of fact, it is often difficult and sometimes impossible to control the development of contractures, especially at the level of the hip, foot and ankle joints.

The four most common deformities which may occur alone or in combination during the convalescent period at the level of the foot and ankle are the equinus, calcaneus, valgus, and varus deformities. The tendency to an equinus deformity can be controlled by the use of an ankle brace consisting of two irons hinged at the ankle with a posterior catch to prevent foot drop. A similar brace with an anterior catch will prevent calcaneus gait. Lateral motion in the foot may be controlled by a single or double iron with a broad T-strap fastened to the side of the shoe and strapped to the opposite heel bar. Generally a single iron will be sufficient. In other cases with marked lateral instability, a double iron may be required. A valgus foot needs an inside T-strap and a varus foot an outside T-strap.

Contractures of the upper extremity are rare. Only 30 per cent of the poliomyelitic patients who have paralysis show evidence of involvement of the upper extremity. Moreover, paralysis of the deltoid muscle is common among the lesions of the upper extremity[2] and results generally in a flail shoulder. Occasionally an adduction deformity of the shoulder may occur, and use of an airplane abduction splint is then indicated. Most of the time, however, the latter support will be need-

---

From the Section of Orthopedic Surgery, Mayo Clinic, Rochester, Minnesota.

Dr. Vandemoortele C.R.B., is a Fellow in Orthopedic Surgery, Mayo Foundation, and an Honorary Graduate Fellow of the Belgian American Educational Foundation, Incorporated.

ed in preventing over-stretching and over-fatigue of weakened or partially paralyzed muscles. An opponens splint may be very helpful in preventing an adduction deformity of the thumb.

In brief, then, it may be said that the patient should have no appreciable deformities if he has had efficient treatment in the first two stages of the disease.

Efficient prevention cannot be achieved if the extent of the disease and the degree of muscle damage have not been recorded. Ghormley emphasizes the importance of giving every patient with poliomyelitis a muscle test as early as possible during the convalescence in order that the possible development of deformities may be detected. However, some contractures which are due to shortening of muscles and fascia and sometimes to strong-muscle imbalance are inevitable, and they become more evident and more severe after the patient has become ambulatory.[5,7,8]

Treatment of Contractures in the Residual Stage

The four more common deformities which will be mentioned are contractures of the forearm, hip, knee and foot.

Forearm.—A severely fixed supination deformity is best corrected by osteotomy of the radius in its midportion.

More frequently, a pronation deformity of the forearm will necessitate an operation. If the pronator teres muscle is sufficiently active, transplantation of this tendon to replace the function of the paralyzed supinators, the procedure advocated by Tubby, is used.[4]

Flexion Contractures of the Hip.—In the lower extremity, the contractures around the hip joint are the cause of numerous deformities. Several forms of treatment for extra-articular contractures of the hip have been described in the past but none has been fully successful. Soutter in 1914 published his method of correction of flexion contractures of the hip, which consisted of stripping the flexor muscles subperiosteally from their original position. This treatment was based upon the concept that these contractures were the result of contraction of the tensor fasciae latae and the iliopsoas and rectus femoris muscles. While the immediate result of the operation was often satisfactory, there were a great number of recurrences.

In 1923 Campbell advised a modification of the Soutter operation. His procedure, called transference of the iliac crest, consisted of transference of the anterior superior spine and the anterior portion of the crest together with their attached muscles to a lower level. However, as Yount observed in 1926, "no case having a flexion contracture of the hip has been observed in which there was not also a flexion contracture of the knee joint together with some lateral distortion." It was obvious that the cause of the flexion contracture of the hip was also the cause of the flexion contracture of the knee.

Deforming Factors of the Contracted Iliotibial Band.—As a result of several observations, Yount stressed the importance of the iliotibial band as the main deforming factor. This fact has been given little attention in the past twenty-five years. Yount advised transverse fasciotomy of the iliotibial band above the patella. In 1928 Forbes wrote on the same subject. It was only in 1948 that Irwin emphasized again the tremendous number of deformities occurring in the lower part of the trunk and the lower extremities as the result of an almost insignificant contracture of the iliotibial band.

Pathogenesis.—The deformities around the hip joint are caused not so much by contractures of the muscle tissues as by shortening or contracture of the intermuscular septa and fascial envelopes. Irwin pointed out "that this fact can be easily demonstrated by dividing the contracted fascia covering the normal muscle tissue and after the cut edges of the fascia retract an inch or more, the (normal) underlying muscle tissue can be picked up with a tissue forceps in a relaxed condition whereas the muscle was tight prior to section of the band."[10] However, as Ghormley pointed out, "If for some reason muscle exercises have been neglected and the (normal) muscles have been at rest or if the member has been in a cast, the smooth surface and the normal glistening appearance of the normal muscle belly may be gone. Adhesions may form between the muscle and its fascial sheath, so that movement is limited." Moreover, muscles that are partially involved can become shortened because of contracture of the involved connective tissue surrounding the normal fibers. This is a kind of vicious circle and it explains, in part at least, why these deformities occur in flail extremities and why, when unilateral, they involve the extremity with the greater weakness. As a result of the connections of the short fascia and fibrosed muscle tissue, extending from the crest of the ilium distally to the head of the fibula, it is easy to understand how this short fibrous mass can produce as much deformity distally about the knee as it can proximally around the hip.

Pathomechanics.—The anatomic location of the iliotibial band in a plane anterior and lateral to the axis of the hip, and lateral and posterior to the axis of the knee, explains the mechanics of the production of contractures.

At the level of the hip joint a shortening of the iliotibial band gives rise to a flexion and abduction deformity of the hip. External rotation is the position of comfort and if this position is allowed to remain, the hip rotators will contract secondarily.

At the level of the knee, the iliotibial band acts as a taut bowstring across the joint. Through the opposing influences of fascial shortening and bone growth, the tibia becomes flexed and abducted on the femur, producing genu valgum and flexion contracture of the knee. Furthermore, in the presence of a strong short head of the biceps, the lateral attachment of the iliotibial band rotates the tibia and fibula externally on the femur. The extreme deformity consists in a subluxation of the tibial condyles on the external condyle of the femur, with the head of the fibula lying in the popliteal space.

With the patient standing and the contracted extremity in weight-bearing position, the pelvis tends to become oblique, causing a secondary scoliosis. Correction of the flexion deformity of the hip with the patient upright tilts the pelvis forward, increasing the lumbar lordosis.

Patients who attempt to walk may show a secondary equinovarus position of the foot as a compensatory result of shortening and external torsion of the leg. There is discrepancy in length of the two extremities, and there is external torsion of the femur.

Treatment.—Early recognition and prevention of shortening of fascia and muscles constitute the best treatment against the development of deformities around the hip joint. On the other hand, once the contracture of the iliotibial band is present, conservative measures such as attempts at correction by traction or extension will only increase the obliquity and hyperextension of the pelvis regardless of the age of the patient or the duration of the deformity (Irwin).[10] Surgical treatment is then indicated and consists in division of the iliotibial band together with the lateral intermuscular septum. In long-standing flexion-abduction contractures of the hip, the division of the iliotibial band must be supplemented by a Soutter fasciotomy. Postoperative treatment consists of use of a double spica cast with increased correction by wedging or traction.

Knee.—The two main deformities seen in the knee joint are bent back knee (genu recurvatum) and flexion contracture. The latter is more frequently seen because of the fact that the quadriceps muscle is most likely to be involved by poliomyelitis. Flexion of the knee is caused by shortening of the iliotibial band and by overaction of the hamstring muscles. This may result in thickening and shortening of the posterior capsule of the knee joint. If the knee cannot be extended by conservative means, division of the iliotibial band and the intermuscular septum and posterior capsulotomy as suggested by Wilson may be necessary.[4]

Foot and Ankle.—If, in the early stages of the disease, prevention of deformities of the foot and ankle has been unsuccessful, or if the correction by conservative measures such as use of braces, irons or orthopedic shoes has been insufficient, surgical procedures may be indicated. The primary function of the lower extremity is locomotion and the chief requisite for locomotion is stability. It is, therefore, essential to consider stabilization of the foot as the most important step in the treatment of a weak or paralyzed foot which is essentially unstable. Tendon transference has its place, but it is usually an adjunct to the stabilization operation. The operation which has proved to be of the greatest benefit is that form of stabilization which is called triple arthrodesis (fusion of the talonavicular, calcaneocuboid and subastragalar joints). This operation insures lateral stability and corrects different deformities of the foot. The amount of bone removed from the various midtarsal joints is dependent on the kind and grade of deformity.

After triple arthrodesis, plantar motion and dorsiflexion of the ankle joint are still possible. If there is also foot drop, some modification is necessary in order to limit motion of the ankle joint (Lambrinudi).[4]

1. Clawtoe and Clawfoot.—A clawtoe deformity consists of hyperextension of the metatarsophalangeal joint and flexion of the interphalangeal joint. This clawtoe deformity is sometimes only apparent on dorsiflexion of the foot and ankle and is caused by overaction of the extensor or weakness of the flexor muscles. Clawtoe is very often a part of or associated with the cavus or clawfoot and is then secondary to the drop of the fore part of the foot. Correction of the clawfoot should be undertaken first, since the contracture of the toes may be relaxed when the longitudinal arch is restored to its normal height and the fore part of the foot is elevated. Correction of the clawtoes is obtained by lengthening of the extensor tendons and dorsal capsulotomy of the metatarsophalangeal joints. Since the short extensor to the great toe does not affect the interphalangeal joint, it is necessary to arthrodese this (interphalangeal) joint in the extended position.

In mild cavus, subcutaneous plantar fasciotomy may be sufficient, and for more pronounced deformities a Steindler stripping may be performed. If the correction of the cavus is still insufficient, anterior wedge osteotomy of the tarsal bones may be combined with the Steindler stripping technique. Another procedure in which the disproportion of muscle power may be equalized and which may prevent its recurrence is the Hibbs tendon transfer of the long extensors of the toe to the cuneiform bones (together with plantar fasciotomy).

2. Varus.—Evertor insufficiency caused by loss of power of the peroneal muscles results in a varus deformity. Transference of the tibialis anterior tendon into the cuboid bone is the operation of choice and, according to Campbell, perhaps one of the most uniformly successful of all tendon transferences in the region of the foot.

3. Valgus.—If the tibialis anterior muscle is paralyzed, the action of the peroneal muscles leads to abduction of the fore part of the foot, eversion of the heel and depression of the longitudinal arch. Tendon transference alone is rarely sufficient. To realign the fore part of the foot and restore the normal longitudinal arch, triple arthrodesis is often necessary.

4. Equinovarus.—If paralysis of the anterior tibialis muscle is associated with weakness or paralysis of the peroneal muscles and if the gastrocnemius and posterior tibialis muscles are normal, the foot will be pulled into an equinovarus deformity. Active dorsiflexion may be restored by forward transference of the posterior tibialis tendon.

5. Calcaneus.—Weakness or paralysis of the triceps surae or gastrocnemius may produce pes calcaneus. A simple method of correction of plantar flexion has been recommended by Bickel and Moe.[3]

After-treatment.—As a rule, the after-treatment of tendon transferences is as follows: The foot is held at a right angle and placed in a boot cast. If the operation has consisted of tendon transference alone, the cast is bivalved at the end of three to six weeks and physical therapy is started. At the end of six weeks, an ankle brace is fitted with a catch to prevent plantar or dorsal flexion. At night and between exercise periods, the back half of the bivalved cast or splint is worn to keep the foot at a right angle.

If tendon transference was associated with arthrodesis of the foot, muscle re-education and physical therapy are delayed for eight to twelve weeks.

References

1. American Orthopaedic Association: Infantile paralysis or acute poliomyelitis; a brief primer of the disease and its treatment. J.A.M.A., 131:1411-1419 (Aug. 24) 1946.
2. Bancroft, F. W., and Marble, H. C.: Surgical Treatment of the Motor-Skeletal System. Ed. 2, pt. 2, 1303 pp. Philadelphia: J. B. Lippincott Company, 1951.
3. Bickel, W. H., and Moe, J. H.: Translocation of the peroneus longus tendon for paralytic calcaneus deformity of the foot. Surg., Gynec. & Obst., 78: 627-630 (June) 1944.
4. Campbell, W. C.: Operative Orthopedics. Ed. 2, 2 vols., 1643 pp. St. Louis: The C. V. Mosby Company, 1949.
5. Elkins, E. C., and Wakim, K. G.: Recent trends in the management of poliomyelitis. Brit. J. Phys. Med., 10:163-167 (Nov.-Dec.) 1947.
6. Forbes, A. M.: The tensor fasciae femoris as a cause of deformity. J. Bone & Joint Surg., 26:579-584 (July-Sept.) 1928.

(Continued on Page 830)

CANCER OF THE TONGUE

ARNOLD J. KREMEN, M.D.
Minneapolis, Minnesota

CANCER of the tongue poses the most pressing therapeutic problem of all intraoral cancer. Although in terms of incidence it is not the most common cancer in the area, it causes more deaths than any other cancer of the head and neck. Reports of highly selected early cases of cancer of the tongue suggest cure rates as high as 56 per cent.[2,5] However, most clinics reporting their over-all results observe five-year survival rates in the area of 14 to 28 per cent.[1,3,6] Survival falls off even more precipitously in those cases with involved regional lymph nodes so that under these circumstances Gibbel, Cross, and Ariel[3] were able to report only a 4.6 per cent survival rate, and Sir Stafford Cade[2] a 9.2 per cent five-year survival.

Radiation, cautery excision or conventional surgical excision of the primary growth have all had their advocates. For permanent control of metastatic cancer to the regional cervical lymph nodes, however, there is broad agreement that radical neck dissection is the procedure of choice. For the most part these modes of therapy have been applied in a discontinuous fashion with attention being directed to the cervical glands only after the primary growth had been treated with reasonable assurance of permanent eradication. In 1948, I first attempted, and subsequently published,[4] a technique of surgical management of cancer of the tongue which applied classical concepts of cancer surgery to this lesion; namely, a primary combined en bloc resection of the tongue, floor of the mouth and cervical lymphatics. To date twenty-three patients have been operated upon by the technique described. This communication concerns itself with an investigation of the findings and subsequent course of these patients. It should be stressed that additional time is necessary before a final appraisal of the results can be arrived at. However, evaluation at this time seems appropriate to assess the achievement to date.

Material

All cases of tongue cancer seen by the tumor clinic and staff at the University of Minnesota since June, 1948, that were deemed suitable for surgical care were operated in the fashion described. Criteria for operability were as follows:

1. That the lesion be confined to one-half of the tongue and/or floor of the mouth and did not grossly extend beyond the midline.

2. Lesions arising primarily in the base of the tongue were excluded since these are highly undifferentiated growths and are ordinarily quite radiosensitive. Moreover, satisfactory reconstructive techniques after sacrifice of the base of the tongue are not as yet available. However, resections as far posterior as the epiglottis have been carried out in this group of patients.

3. Clinical evidence of regional lymphatic involvement was not looked upon as a contraindication unless the nodes were massively enlarged, agglutinated and fixed.

4. Age in itself was no contraindication. Four of the patients were over seventy years of age.

Lymph Node Involvement

If cancer in any site is to be treated surgically it is desirable that a complete excision of the regional lymph draining area be effected at the time of definitive therapy if at all possible. This concept as applied to cancer of the tongue has been the subject of considerable debate. Martin and associates[5] have stated that over 60 per cent of unselected cases of cancer of the tongue metastasize at some time during the course of their disease. However, the same author noted in a highly selected group of cases of cancer of the tongue who had no demonstrable cervical metastases at the time of therapy and in whom the lesion remained permanently controlled, that only 22 per cent later exhibited metastatic cancer. On the other hand, Roux-Berger,[7] in 1949, reported a study on 173 patients with cancer of the tongue who had radical neck dissections when there was no clinical evidence of cervical gland envolvement. In this series he was able to dem-

---

Presented before the Minneapolis Surgical Society, November 6, 1952.

From the Department of Surgery of the University of Minnesota and the University Surgical Service of Mount Sinai Hospital, Minneapolis, Minnesota.

onstrate metastatic cancer microscopically in eighty-one patients or 46 per cent of the group.

In the present study fifteen of the twenty-three patients had no clinical evidence of lymph gland involvement at the time of surgery. In six of these fifteen cases, or 40 per cent, it was possible to demonstrate metastatic lymph node involvement on routine microscopic study of the specimens. Since these specimens were not studied by a serial section technique, this 40 per cent is a base line figure and in actuality the incidence of metastases may be considerably higher. Saphir and Amromin,[8] in 1948, studied by serial section thirty cases whose axillary lymph nodes were removed by radical mastectomy and were reported as negative on routine pathologic study. By the enormous labor of serial section examination, they were able to demonstrate nests of cancer in the lymph nodes of ten specimens or 33 per cent of cases judged to be negative on routine sampling of the specimen. In the light of our experience with cancer of the tongue showing that at least 40 per cent of clinically negative cases have metastatic involvement, it would appear that radical lymph node dissection should be an integral part of any plan of treating cancer of the tongue surgically.

There were eight cases in this series where physical examination revealed enlarged palpable submaxillary or cervical lymph glands which were considered clinically to be involved with metastatic cancer. On microscopic examination of these specimens, five of eight cases, or 62 per cent, revealed cancer in the lymph nodes. This experience is similar to that of operable cancer of the breast when the axillary nodes are felt clinically to be involved.

Results

To date there have been five recurrences noted in the entire group of twenty-three patients who probably will, or already have, died of their disease. Only one of these recurrences has been in the oral cavity; the others have all been in the neck. All of these patients had positive lymph nodes.

Table I shows that the average number of months to the appearance of recurrence was ten months. However, this figure is overbalanced by the one case that went twenty-one months. Four of the five cases had evidence of recurrence by six months after the operation or earlier.

TABLE I.

Patient	Time Interval in Months from Surgery to Recurrence
B.F.	6
H.R.	6
E.E.	21
C.M.	5
F.W.	2

TABLE II.

No. of Cases	Month Since Surgery	Status
1	40	l & w
1	32	l & w
2	28	l & w
3	24	l & w
1	18	l & w
1	12	l & w
3	less than 12	l & w
Total 12		

Of the entire group of twenty-three patients, seventeen, or 74 per cent, are living and free of demonstrable disease. Five developed recurrent disease and one died postoperatively of unexplained fever. Nineteen patients had been operated upon over a year prior to the period of evaluation. Of these, thirteen, or 68 per cent, are living and free of demonstrable recurrence.

In the eleven patients with histologically positive lymph nodes, six are dead or living with a recurrence (including one postoperative death). Five patients are alive and well forty-eight, thirty-three, eighteen, twelve and ten months from the time of their operation. Of the twelve with histologically negative lymph nodes, all are alive and free of recurrence. The number of patients living and well and the time from operation to their last evaluation are shown in Table II.

Discussion

The operation as described has been shown to yield acceptable cosmetic and functional results. There has been some difficulty with speech in the early postoperative period but after a period of adjustment these people have regained sufficient proficiency to be able to converse satisfactorily. Most of those that had been gainfully employed were able to return to their previous duties. Similarly the ability to eat and swallow poses a problem in the early postoperative period. However, with time they have been able to take enough by mouth to satisfy both their nutritional requirements and their gustatory desires with minor restrictions.

Transection of the mandible, to provide the exposure necessary to do an adequate incontinuity operation has not posed any problem. Accurate coaptation of the severed mandible with stainless steel wires placed through drill holes, leads to prompt healing of the bone with preservation of the mandibular arch. This technique is designed for management of cancer of the tongue where involvement of the mandible is not a consideration. If one suspects that the mandible is invaded by the tumor, the bone should be sacrificed without question and removed en bloc with the rest of the specimen. However, in the usual case of cancer of the tongue, the lesion is well away from the mandible and its sacrifice is unnecessary and unjustified. It is transected and retracted to provide exposure and permit an en bloc excision of the primary lesion and the cervical lymphatics and then is returned and fixed in position to preserve the contour of the face.

Summary and Conclusions

1. Twenty-three patients have been operated upon for cancer of the tongue in the fashion described. There was one postoperative death.

2. Of the entire group of twenty-three cases, seventeen, or 74 per cent, are alive and well. Of nineteen cases treated from one to four years ago thirteen, or 68 per cent, are alive and free of recurrence.

3. From this preliminary appraisal of results, which is too early for final conclusions, the results appear encouraging and strongly justify continuation of the study.

References

1. Bervin, Elis: End results of treatment of cancer of the tongue. Am. J. Roentgenol., 63:712, 1950.
2. Cade, Sir Stafford: Treatment of cancer of the tongue. Am. J. Roentgenol., 63:716, 1950.
3. Gibbel, M. L.; Cross, J. H., and Ariel, I. M.: Cancer of the tongue. Cancer, 2:411, 1949.
4. Kremen, A. J.: Cancer of the tongue; a surgical technique for a primary combined en bloc resection of tongue, floor of the mouth and cervical lymphatics. Surgery, 30:227, 1951.
5. Martin, H. E.; Munster, H., and Sugerbaker, E. D.: Cancer of the tongue. Arch. Surg., 41:888, 1940.
6. Peterson, D., and Stenstrom, K. W.: Carcinoma of the tongue. Staff Bull., U. of Minn. Hosp., 14:15, 1948.
7. Roux-Berger, J. L.; Baud, M., and Courtial, J.: Cancer de la partie mobile de la langue. La curage ganglionaire prophylactique est-il justifie? Stastique de la Foundation Curie. Me'm Acad. de chir., 75: 120, 1949.
8. Saphir, O., and Amromin, G. D.: Obscure axillary lymph node metastases in carcinoma of the breast. Cancer, 1:238, 1948.

DIAGNOSIS AND TREATMENT OF POLIOMYELITIC CONTRACTURES

(Continued from Page 827)

7. Ghormley, R. K.: History of Treatment of Poliomyelitis. In American Academy of Orthopaedic Surgeons: Lectures on Regional Orthopaedic Surgery and Fundamental Orthopaedic Problems: Selected from the Instructional Courses of the Thirteenth Annual Assembly, Chicago, January 19-23, 1946, pp. 151-160. Ann Arbor, Michigan: J. E. Edwards, 1947.
8. Green, W. J.: The Treatment of Infantile Paralysis. In American Academy of Orthopaedic Surgeons: Lectures on Regional Orthopaedic Surgery and Fundamental Orthopaedic Problems: Selected from the Instructional Courses of the Thirteenth Annual Assembly, Chicago, January 19-23, 1946; Ann Arbor, Michigan, J. E. Edwards, pp. 161-166, 1947.
9. International Poliomyelitis Congress: Poliomyelitis; Papers and Discussions Presented at the First International Poliomyelitis Conference. 360 pp. Philadelphia: J. B. Lippincott Company, 1949.
10. Irwin: Personal communication to the authors.
11. Jones, Robert, and Lovett, R. W.: Orthopedic Surgery. Ed. 2, 807 pp. New York: William Wood and Company, 1929.
12. Lenhard, R. E.: Prognosis in poliomyelitis. J. Bone & Joint Surg., 32A:71-79 (Jan.) 1950.
13. McCarrol, H. R., and Grego, C. H., Jr.: An evaluation of physiotherapy in the early treatment of anterior poliomyelitis. J. Bone & Joint Surg., 23:851-861 (Oct.) 1941.
14. Mercer, W.: Orthopaedic Surgery. Ed. 4. 1016 pp. Baltimore: Williams & Wilkins Company, 1950.
15. Yount, C. C.: The role of the tensor fasciae femoris in certain deformities of the lower extremities. J. Bone & Joint Surg., 24:171-192 (Jan.-Mar.) 1926.

SOLITARY NONPARASITIC CYSTS OF THE LIVER

DAVID GAVISER, M.D.

Minneapolis, Minnesota

SOLITARY nonparasitic cysts of the liver are rarely encountered, but are not uncommon. Up to the present time 196 cases of solitary nonparasitic cysts of the liver have been reported. In 1929, Stoesser and Wangensteen[12] reported the presence of 102 recorded cases in the literature, and added two cases of their own. In 1937, Davis[7] presented an extensive study of nonparasitic cysts of the liver and reported the existence of 187 recorded cases in the literature, to which he added an additional case. Ochsner[11] reported a case in the same year. Jennings and Attix[2] each reported an additional case in 1939, and Montgomery[9] added two cases to the existing number in 1940. Monroe[10] reported a case in 1942. Caravati[5] added a case in 1950, and Abolfathi,[1] added another case in 1951, bringing the total to 196. At this time, I am reporting a patient who came under my care, and through the courtesy of Drs. O. H. Wangensteen and F. John Lewis, I have the privilege of reporting two additional patients who were operated upon at the University Hospital. In only three previously reported cases has a correct preoperative diagnosis been made.

Case 1.—The patient, a fifty-one-year-old white woman, was admitted to the hospital on October 3, 1952, with the history that five days prior to admission she had developed a pain in her lower abdomen. On the following morning the pain shifted to the right upper abdomen and remained there. The pain was quite severe and aggravated by breathing and movement. There were no other associated symptoms. The patient had no chills or fever. The aching pain in the right upper quadrant of the upper abdomen persisted without any appreciable change. On the morning of her admission there was some diminution in the severity of her pain.

In May of 1952, the patient had felt tired and generally run down and consulted her private physician who found what appeared to be an enlarged liver. Colon study, gall-bladder study as well as gastrointestinal x-ray were done at that time and were reported as normal. The liver was reported as being enlarged.

Physical examination at the time of admission revealed marked tenderness in the right upper quadrant with muscle spasm and rigidity. There appeared to be a tender mass lateral to the midline on the right side below the costal margin and about 4 cm. from the midline. The mass appeared to be about 2 cm. in diameter and felt as though it was within the abdominal cavity. The liver appeared to be greatly enlarged extending down to the umbilicus and across to the left costal margin. The surface of the liver felt smooth and the edges sharp and firm. The liver itself did not appear to be tender. The spleen was questionably enlarged below the costal margin. The patient was seen in consultation by an internist, and it was the clinical impression that a cirrhosis could possibly account for the hepatomegaly and splenomegaly. The possibility of a metastatic lesion to the liver had to be considered since there was a mole on the dorsum of the left hand. (The lesion on the left hand was biopsied and proved to be a benign blue nevus.)

X-ray examination on admission: chest, right diaphragm enlarged; heart and lungs, normal (Fig. 1.) Flat and upright plates of the abdomen showed the right upper quadrant occupied by a large mass which was confluent with the liver or could be a markedly enlarged liver (Fig. 2.) This displaced the hepatic flexure downward. An intravenous pyelogram showed the right kidney displaced downward and rotated. There was no intrinsic lesion within the kidneys (Fig. 3.) X-ray following a barium enema showed the hepatic flexure of the colon displaced medially and anteriorly (Fig. 4a.) Gastrointestinal study showed displacement of the second portion of the duodenum (Fig. 4b.) could indicate that the mass in the abdomen was partially retroperitoneal so as to displace both the kidney and the duodenum.

Due to the presumptive diagnosis of cirrhosis of the liver, the internist felt that a liver biopsy should be done. There was some difference of opinion on this, because it was felt that a liver biopsy would not provide any more information than an exploration, which was contemplated in a few days. However, on the insistence of the internist, the biopsy was attemped in the anterior axillary line below the costal margin. On insertion of the needle, clear fluid was returned through the needle. A total of 600 cc. of clear fluid was obtained. This established the presumptive diagnosis of a solitary nonparasitic cyst of the liver. Examination of the fluid obtained revealed: specific gravity, 1.011; 18 erythrocytes (this was considered due to the puncture), and no leukocytes. There was 1 gram per liter of protein according to the Esbach method. There were no parasites or amebae found. No echinococci were found. On routine culture for bacteria and fungi, no growth was reported after four days. Amylase activity was 0.

Operative Report.—The abdomen was entered through a long right paramedian incision which extended from the xiphoid process to just below the umbilicus. The anterior rectus sheath was incised in the same direction and the rectus muscle was dissected from the sheath and

---

Inaugural Thesis presented before the Minneapolis Surgical Society, November 6, 1952.

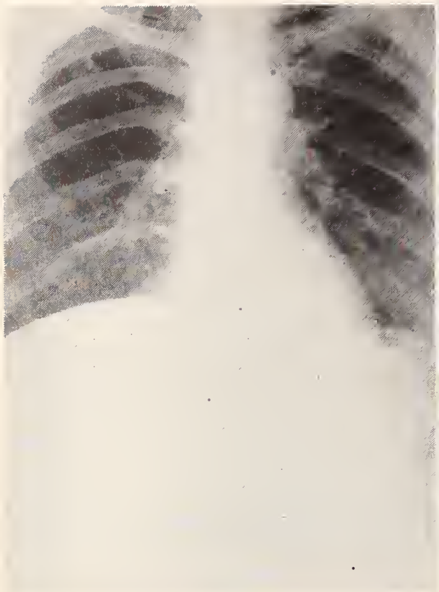


Fig. 1. The right diaphragm is elevated and flatened, especially in the medical portion. There was delayed and decreased motion on flouroscopy.

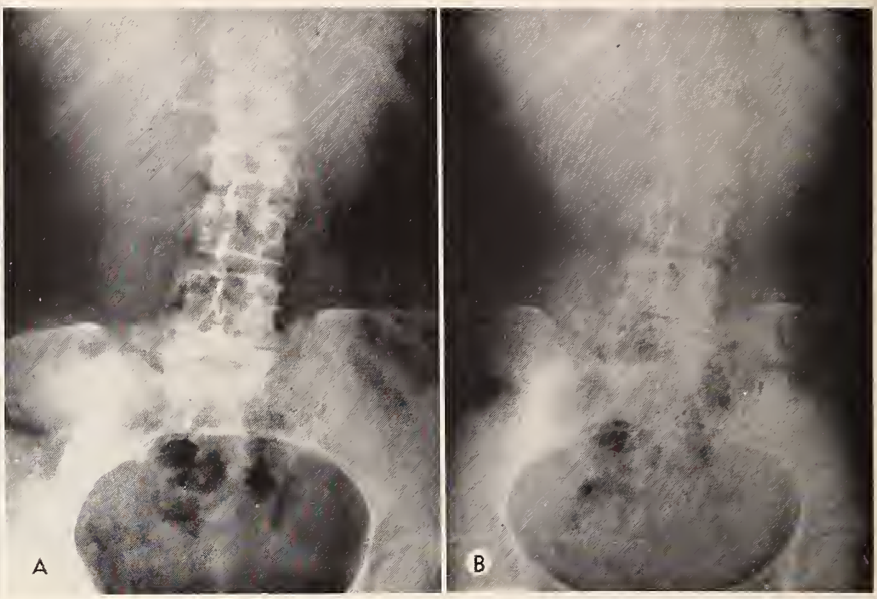


Fig. 2. A large mass in the right upper quadrant and displacement of the hepatic flexure of the colon.
A. Flat plate of the abdomen. B. Upright plate of the abdomen.

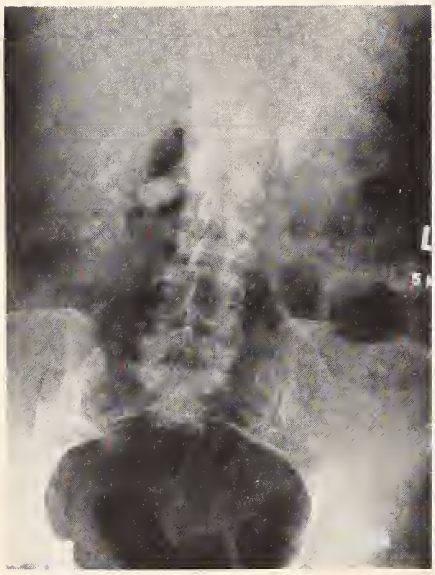


Fig. 3. Intravenous pyelogram: downward displacement of the right kidney and medial rotation of the superior pole.

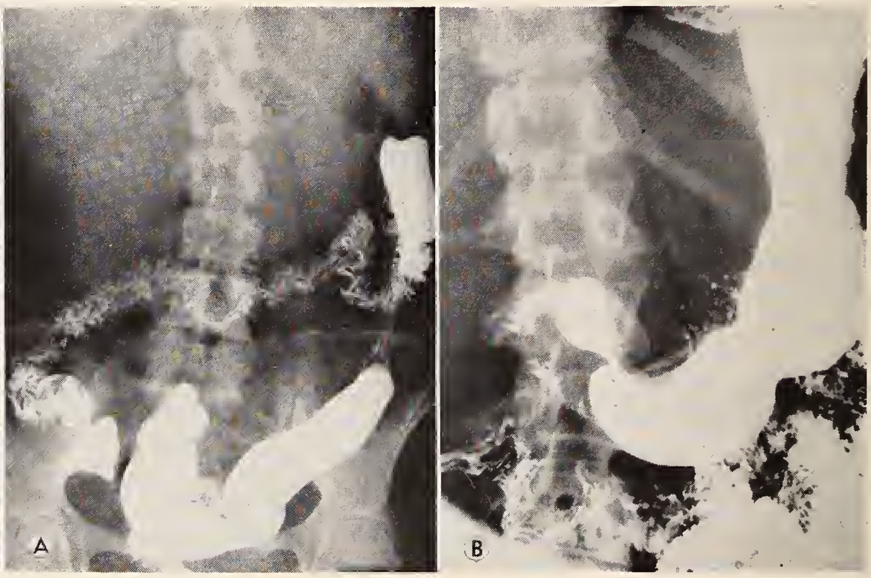


Fig. 4. Barium enema x-ray.
A. Depression of the hepatic flexure of the colon by the enlarged mass in the right upper quadrant.
B. Displacement of the second portion of the duodenum.

retracted laterally. The posterior rectus sheath was incised vertically. There was a small mass of infarcted fatty omentum attached to the round ligament of the liver. This accounted for the tender mass in the right upper quadrant felt preoperatively and was possibly due to the displacement of the liver against the anterior abdominal wall. The liver was obviously enlarged. However, the cyst was not immediately visible. The palpation of the right lobe of the liver revealed the presence of the cyst high up under the costal margin. The liver was retracted downward and medially and a large cystic area which was confluent with the remaining surface of the liver was found occupying the superior, lateral, and posterior surface of the right lobe of the liver. The surface of the cyst was smooth, shiny and had a bluish appearance. Coursing within the wall of the cyst were many dilated veins. The site of the previous puncture of the cyst was a bare 0.5 cm. from the edge of the cyst. The exploration of the remainder of the abdomen revealed no abnormality. There were no cystic changes in the pancreas, kidneys, or spleen. It was obvious because of its position high under the costal margin that any attempt to marsupialize the cyst or drain it would be impossible. An attempt was then made to establish a cleavage plane between the cyst wall and the surrounding liver. Because it appeared that this would be difficult, it was decided to empty the cyst of its contents. An incision was made into the cyst, 3 cm. from what appeared to be the cyst wall edge and the contents were aspirated. The fluid was clear and colorless. The inner surface of the cyst was finely trabeculated; 2,000 cc. of fluid were aspirated before the cyst completely collapsed. A good cleavage plane was then found between the liver and the cyst wall and it was possible by mainly blunt dissection to completely excise the cyst. As the dissection proceeded it was found that many large vessels were firmly attached to the outer cyst wall, and these required ligation. Upon completion of the dissection a large defect remained in the liver measuring approximately 16 cm. in diameter. It was possible to obliterate the major portion of the cavity by suturing the thinned out areas of liver surrounding the cyst into the defect, and then approximating the remainder of the liver to itself. A Penrose drain had previously been placed in the depths of this closure. A large Penrose drain was placed above the liver and both drains were brought out by separate stab wounds on the lateral side of the abdomen. The abdomen was then closed in layers. The patient withstood the operative procedure well and left the operating room in good condition.

The pathological report was "large simple cyst of the liver, congenital in origin."

The postoperative course was uneventful except for a persistent low grade fever for two weeks postoperatively.

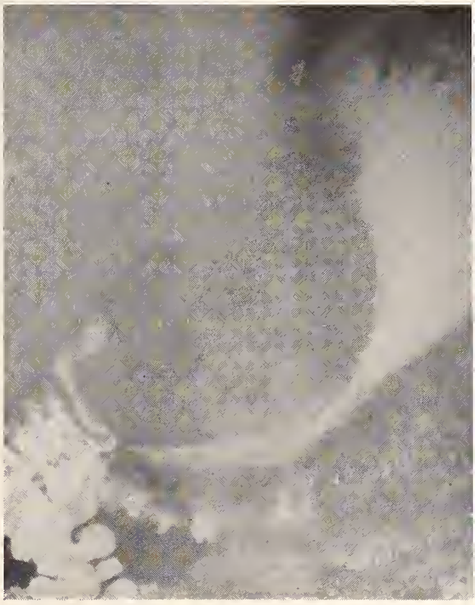


Fig. 5. Gastrointestinal study: a mass pressing on the lesser curvature of the stomach.

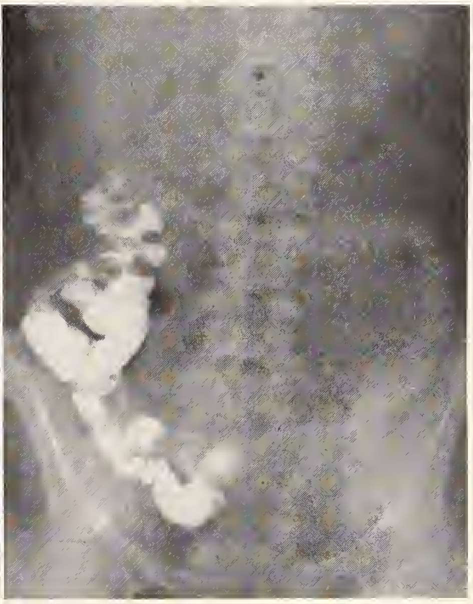


Fig. 6. Colon study: a large oval mass in the abdomen and displacement of the transverse colon.

Case 2.—This forty-seven-year-old white woman was first studied in the Cancer Detection Center because of vague symptoms of upper abdominal distress consisting of gas pains, belching, and slight distention following eating, particularly of fatty and fried foods. On the basis of these findings a cholecystogram and upper gastrointestinal x-ray was done. The cholecystogram was normal. The upper gastrointestinal study, however, showed the presence of a smooth rounded symmetrical defect of the lesser curvature of the stomach and the duodenal bulb (Fig. 5.) This finding suggested pressure from an extrinsic mass. Because of its position and the symmetrical contour of the defect a pancreatic cyst was considered to be the most likely possibility. X-ray examination of the colon showed on the post-evacuation study that the transverse colon was displaced somewhat inferiorly (Fig. 6.) In addition, a large oval shaped mass could be made out in the upper mid-portion of the abdomen. This finding also suggested the presence of a large cyst of the pancreas.

Her past health had been good. In 1928, an appendectomy had been done, and in 1930, a subtotal thyroidectomy had been performed. Her systemic review was entirely negative except for the fatty food intolerance. Physical examination revealed only the presence of fullness in the upper abdomen which was interpreted as the mass in the upper abdomen seen on x-ray. A preoperative diagnosis of pancreatic cyst was made. Due to the obesity of the patient she was placed on a reduction diet prior to the operation.

On July 3, 1950, the patient was operated upon. Through a midline upper abdominal incision and sternal

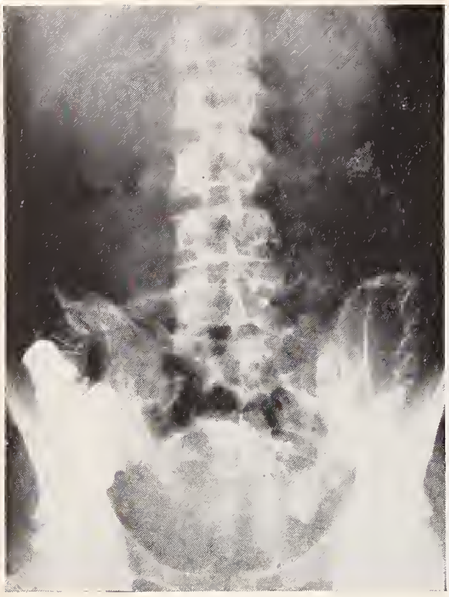


Fig. 7. Colon study: depression of the transverse colon with deflection of the lower sigmoid to the left.

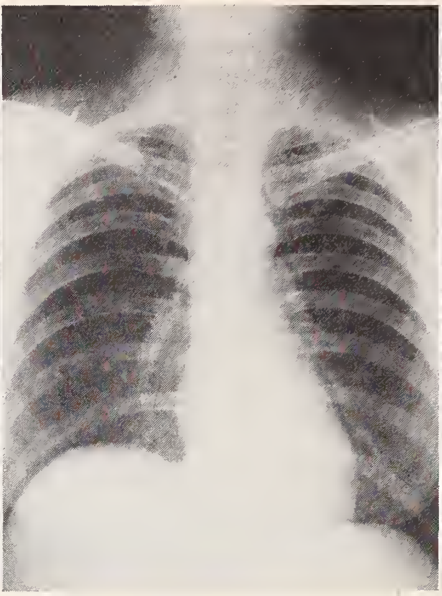


Fig. 8. Chest x-ray shows elevation of the right diaphragm.

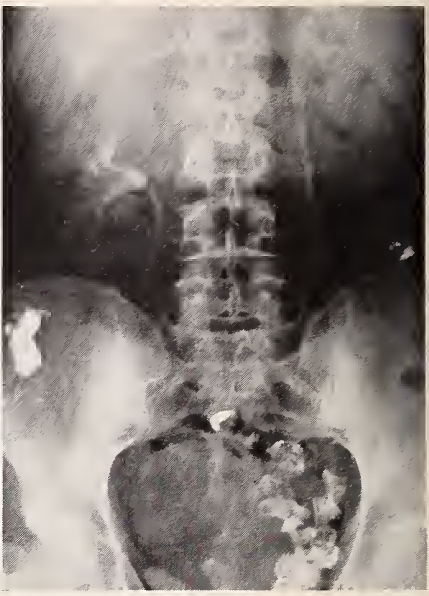


Fig. 9. X-ray of the kidneys shows downward displacement of the right kidney.

splitting incision, the abdomen was entered. It became apparent that there was a large cyst of the left lobe of the liver, largely replacing this portion of the liver. The cyst was then opened and its fluid contents aspirated. Most of the cyst wall right down to the liver edge was then excised. Because of the possibility that this might be a choledochal cyst, the common bile duct was opened and explored to see if there was any communication between the common bile duct and the cyst itself. The common bile duct did not enter the cyst, nor was there any connection with the bile duct itself. Some bile oozed out from the liver edge. In order to circumvent a bile peritonitis, catheters were placed within the defect produced by the excision of the cyst and the defect was closed by coaptation of the liver edges. Penrose drains were also placed within this area, down into the liver substance, and the catheters and Penrose drains were brought out through a stab wound in the abdominal wall. A T-tube was left in the common duct and brought out through a separate stab wound. The sternal incision was closed with stainless steel wires and the abdominal wall with interrupted silk.

On the following day the patient appeared to be quite dyspneic. X-ray examination revealed the presence of a pneumothorax on the right. There was subcutaneous emphysema over the right side of the chest and the anterior surface of the neck. Thoracentesis was done through the right third inter-space anteriorly and 700 cc. of air was removed.

The patient improved clinically after the aspiration of the chest. X-ray showed full expansion of the right lung. The T-tube and the drains were removed by the fourteenth postoperative day and the patient was discharged on the following day. The aspirated fluid was not subjected to analysis. The patient was last seen on August 14, 1951, and then had no subjective complaints or abnormal objective findings.

Pathological report was "benign non-parasitic cyst of the liver."

Case 3.—This fifty-six-year-old white woman came to the Cancer Detection Clinic on July 5, 1951. During the course of the routine examination a mass in the pelvis was found. The patient was then referred to the gynecologic clinic, having previously been a patient at the University Hospital.

Her past health had been poor. She had had an appendectomy in 1921. She had suffered from a migraine type of headache and also complained of intermittent abdominal distress. ' She had suffered frequently from backache and lower quadrant distress. In 1950, an x-ray diagnosis of duodenal ulcer had been made. In 1926, the patient had had an episode of painless jaundice which was not diagnosed. She also complained of nocturia and urinary frequency. Her last menstrual period was in 1944, when x-ray sterilization had been done for abnormal menstrual bleeding. She had had no bleeding or discharge since that time.

Physical examination revealed tenderness in the right lower quadrant. On pelvic examination a firm mass about the size of an orange lay behind the uterus and could not be separated from the fundus. The mass extended into the cul de sac and was somewhat mobile. The right ovary appeared somewhat larger than normal; the left could not be separately felt. The clinical impression was the probable presence of a left ovarian tumor.

X-ray examination of the colon was done and this showed some deflection of the lower sigmoid to the left as by a pelvic mass (Fig. 7.) There was likewise downward displacement of the hepatic flexure of the colon and there was a suggestion of a mass present in the right upper quadrant. Chest x-ray showed the right hemidiaphragm somewhat elevated (Fig. 8.) An intravenous pyelogram showed that the right kidney was lower than normal (Fig. 9.) The conclusions from the x-ray examinations were that the liver was enlarged, elevating the right diaphragm, and seemed to be depressing the right kidney somewhat. There was also a mass in the mid-line of the pelvis which displaced the left ureter laterally and depressed the superior aspect of the bladder.

On July 17, 1951, the patient was operated upon by the gynecologic service. Exploration of the abdomen revealed a large cyst of the right lobe of the liver. The remainder of the liver, the spleen, and kidneys were normal. Examination of the pelvis revealed the left ovary completely replaced by a large cystic mass. The right ovary was likewise involved. A hysterectomy was done for bilateral serous cystadenocarcinoma of the ovaries.

The patient was then treated postoperatively with x-ray therapy to the pelvis. Because the cyst of the liver appeared to be asymptomatic and because of the presence of the malignancy in the pelvis, nothing further was done to the cyst of the liver. The patient was followed in the surgical and gynecologic out-patient departments. During this period she began to complain of increasing right upper quadrant pain unrelated to meals. A cholecystogram and upper-gastrointestinal series showed no evidence of abnormalities.

Although it was not felt that the cyst of the liver was the cause of her distress, she was admitted and subjected to abdominal exploration on December 12, 1951, with the idea in mind of removing the cyst of the liver. Exploratory laporatomy revealed no evidence of recurrence in the pelvis of the serous cystadenocarcinoma. A large cyst occupying the major portion of the right lobe of the liver was found. A wall of the cyst was thin and translucent. The cyst was evacuated of 1700 cc. of clear colorless fluid. The cyst was unilocular and occupied the anterior surface of the right lobe of the liver and extended down to the right border of the gall bladder. The postoperative course was uneventful and the patient was discharged on her sixth postoperative day.

Pathological report was "benign cyst of the liver."

Discussion

Nonparasitic cysts of the liver occur either as single or multiple cysts. Multiple cysts occur in the liver alone, but are usually associated with cysts of the pancreas, kidney, spleen, lungs and brain. Monroe (Sonntag)[10] suggested that cystic disease and solitary cysts of the liver were but different variations of the same disease. No definite proof of this contention has been produced. Stoesser and Wangensteen[12] stated, "It is generally accepted that the solitary cyst in nonarteriosclerotic kidneys is but another expression of polycystic disease." A corresponding similarity would appear to extend to the manifestation of the disease in the liver. In several cases reported of solitary cysts of the liver, there have been small cysts in the proximity of the large cysts. This contention is a debatable one and in most reports the two conditions have been reported as separate entities. Monroe[10] feels that until more is known about the solitary cysts of the liver, these two conditions should be treated as separate entities. The incidence of the disease is higher in women and is roughly three to four times as frequent as in men. Solitary nonparasitic cysts of the liver have been observed at all ages. The oldest case was that of a man aged seventy-five years of age reported by Bland-Sutton.[3] The contention that these cysts are congenital in origin is substantiated by their occurrence in the new-born. Witzel[13] reported a case of a large liver cyst in the new-born which complicated labor. Other investigators have reported similar instances. The cysts are more commonly found in the anteroinferior portion of the right lobe of the liver. The quadrate lobe and the left lobe are sometimes involved and with less frequency the central portion of the liver. The size of the reported cysts and the amount of liver destruction present have varied considerably. Some of these cysts reported have been microscopic and others have filled the entire abdomen. Cousins[6] reported a cyst of the liver which contained 2.5 gallons of clear yellow fluid. The external surface of the cyst is usually smooth, shiny, and grayish-blue in color showing many dilated veins. The internal surface may be finely trabeculated. The thickness of the cyst wall is variable, being reported as varying from 0.5 mm. to 2 cm. in thickness. The microscopic appearance of the wall according to different authorities consists of three layers of connected tissue. An inner layer rich in cellular element, a circularly arranged dense layer poor in cell nuclei, and containing a few blood vessels with thickened intima, a loose outer layer with elastic fibers, muscle bundles rich in cells, many blood vessels, and bile ducts. The cyst is lined with cubical, cylindrical, or flat cells, but the epithelium is much desquamated. The bile ducts found in the wall of the cysts are usually lined with the same kind of epithelium which lines the cysts. The fluid contents of the cysts vary from a clear watery, sometimes yellow-brown fluid, having a specific gravity varying from 1.007 to 1.024, to a semi-solid material resembling an organized clot. The cyst fluid may contain albumen, mucin, cholesterol, blood and occasionally bile. Boyd[4] explained the presence of bile in some cysts by stating that as the cyst increased in size, large bile ducts ruptured into the cysts, their walls being destroyed by pressure. The etiology of solitary nonparasitic cysts, however, is unknown. Monroe[10] quotes the classification of Sonntag as being the most generally accepted.

A. Blood and degenerated cysts
B. Dermoid cysts
C. Lymphatic cysts due to obstruction or to congenital dilation of the lymphatic
D. Endothelial cysts
E. Cysts due to bile duct obstruction
F. Proliferative cysts (cystadenoma)

No classification of nonparasitic cysts of the liver has yet been presented which has found general acceptance. This may be due to the fact that there is a discrepancy in regard to the pathological interpretations of the histological findings.

Clinical Findings

There are a few identifying symptoms or signs which would lead one to suspect the presence of these solitary cysts. This may be due to the fact that these cysts grow so slowly that the abdominal contents accommodate themselves to their presence. Many of the cases remain asymptomatic and are discovered incidental to the investigation of other suspected or actual intra-abdominal disease. Others may present themselves with painless abdominal swelling. Mild gastrointestinal symptoms such as nausea, occasional vomiting, and diarrhea have been reported. It appears that pain directly related to the cysts is an uncommon complaint. In those cases in which pressure from the cyst has resulted in extrahepatic obstruction, biliary tract symptoms and jaundice have been the presenting complaints. Very few of these solitary cysts of the liver have been recognized clinically, most having been mistaken for cysts of other abdominal organs, that is, ovarian cysts, mesenteric cysts, hydrops of the gall bladder, pancreatic and renal cysts. When symptoms were present they were due either to pressure, tortion of the pedicle or rupture of the cysts.

Most observers feel that diagnosis preoperatively is almost an impossibility. Abdominal swelling is probably the most frequent pathognomonic sign. The presence of a mass in the upper abdomen is extremely suggestive. The roentgenologist may be of considerable aid in the establishing of a diagnosis. Large tumors of the liver depress the hepatic flexure of the colon. With neoplasms of the kidney, the colon usually lies over this swelling. Intravenous pyelography may reveal the downward displacement of the kidney by an enlarged liver. Gastrointestinal study may show the displacement of the kidney to the left of and anteriorly to the duodenum as well as evidence of external pressure on the lesser curvature of the stomach. Ordinary chest x-ray may show elevation of the diaphragm if the liver is sufficiently enlarged.

Treatment

The only satisfactory treatment for solitary cysts of the liver in which relief is required is surgical intervention. Complete excision of the cyst should be attempted if feasible. Frequently this procedure cannot be done without jeopardizing the patient. Marsupialization or just simply drainage has been reported as producing very satisfactory results.

Summary

Three cases of solitary nonparasitic cysts of the liver have been presented. These cysts are obscure in their origin, appear to be congenital in nature, occur more frequently in women, seldom give rise to any symptoms except as they exert pressure on the adjacent organs. They occur more commonly in the anteroinferior portion of the right lobe of the liver and in this position x-ray findings of downward displacement of the right kidney and medial displacement of the duodenum may suggest the diagnosis. Large cysts of the left lobe may simulate a pancreatic cyst in the x-ray findings. The correct preoperative diagnosis is rarely made. Only three cases have been previously reported in which the correct preoperative diagnosis was made. The last reported case in the literature where a correct preoperative diagnosis was made was by Caravati when during the performance of a punch biopsy of the liver, the cystic cavity was entered. In the case which came under my care, a similar fortuitous circumstance occurred. Surgical treatment consists of removal of the cyst when the nature of the attachment permits, marsupialization, or simply drainage if excision is not feasible.

(Continued on Page 849)

THE USE OF THE KUNTSCHER NAIL FOR FRACTURES OF THE FEMORAL SHAFT

DANIEL J. MOOS, M.D.
Minneapolis, Minnesota

SURGEONS have been disappointed so often by the end results of new spectacular techniques that it is indeed refreshing to review a subject that leaves one more enthusiastic than seemed possible at the initiation of the method. In the fall of 1944, intramedullary nails used in the treatment of fractures in the femoral shaft first came to the author's attention. These nails had been used in Germany in Prisoner of War Camps and seemed to us at the time to represent a dangerous method of treatment which was perhaps dictated by the necessities and lack of facilities incident to wartime. The sharply ingrained dictum of adequate immobilization of fractures after any type of internal fixation tended to induce rejection of this concept which allowed free motion of the fractured extremity postoperatively with full weight bearing.

Precedents of the past, of course, amply supported a pessimistic attitude. The pendulum of popularity following Lane's description[5] of internal fixation had already swung back almost to the point of the method's disrepute when the introduction of electrolytically inert metals[6,8] plus realization of the necessity for co-existing external immobilization again revived the employment of an essentially sound technique. With the spectre of wasted muscles and stiffened joints which so often follow long-continued immobilization in plaster, reminding us constantly that normal active motion in a fractured extremity would be extremely desirable, further examination of Kuntscher's method[4] seemed to be indicated.

Hey Groves[3] in 1918 described intramedullary fixation of several complicated fractures in the femoral shaft by the insertion of massive metal nails into the medullary canal. For this purpose he devised tubular, cruciform and solid nails placed by a surgical technique quite similar to that employed today. His results were poor probably not through fault of the method or technique but rather in the selection of cases which were severe, badly infected compound wounds of war, which may well have proved refractory to any method of therapy. We hear no more of the method as applied to fractures in the femoral shaft until Kuntscher,[4] in 1940, described the use of a clover leaf shaped hollow metal rod inserted over a guide through the greater trochanter down the medullary canal of the proximal and distal femoral fracture fragments. His method necessitated prolonged fluoroscopy or multiple x-ray film control for closed reduction of the fracture and blind insertion of the nail. Bohler[1] of Vienna immediately adopted the technique and devoted a volume of his book to the use of intramedullary nailing not only in femoral fractures but in fractures of the other long bones. Prominent in the reports of Kuntscher[4] and Bohler[1] was the ever present fear of complicating infection associated with surgical exposure of fractures. Undoubtedly, during wartime, crowded facilities and inadequate material augmented this danger which for many years has been peculiar to continental European operating theaters. In other parts of the world, surgeons do not share this experience and report the overall incidence of postoperative infection in clean cases to be under 1 per cent.[4] Hazard to operating room personnel and the patient from excessive irradiation due to repeated fluoroscopy or film exposure during reduction of a femoral fracture and blind insertion of a nail is very real. The danger of rupture of the femoral artery should the nail miss the distal segment exists and has occurred. The impossibility of dealing with severely comminuted fractures is readily apparent. Marked interposition of soft tissue cannot be corrected by closed methods. These hazards when compared with the accuracy, safety, and ease of open reduction and insertion of the nail under direct vision indicate the open technique to be the method of choice. With the modern surgical complements of controlled anesthesia, blood transfusion, proper instruments and antibiotic drugs, experienced surgeons can approach this procedure with confidence. So again we see an old method which was abandoned

---

From the Surgical Service of the Minneapolis General Hospital.

Read before the Minneapolis Surgical Society, November 12, 1952.

because of improper application rise in popularity to a point where its employment must be considered in all cases of fracture in the shaft of the femur.

In considering the various indications for the use of the intramedullary nail in the femur, it is necessary to be concerned with the anatomical characteristics of that bone which relate to the mechanical problem of insertion of a Kuntscher[4] nail. The most pertinent factor is the transverse diameter of the medullary canal at different levels in the femur. For all practical purposes, we may consider it broad in the upper and lower thirds and in the mid portion to narrow down to the so-called isthmus. It is at this point that the nail to be inserted must have snug clearance. It is precisely at this point also that fractures are most amenable to firm fixation by the nail. Average transverse diameters of femoral medullary canals in their narrowest portion are about 10 to 11 mm. They vary, however, from 8 to 15 mm. and must in every instance be determined preoperatively by careful measurement of the uninjured side. A description of these methods of measurement will be included in a later paragraph. Stability is afforded the nail and concomitant additional fixation of the fracture also occurs at the point where it passes through the cortex of the greater trochanter. From the foregoing we may state that in all cases the nail may be very firmly fixed in the upper two-thirds of the femur. It then follows that fractures present in the upper two-thirds of the femoral shaft may be suitable for this type of fixation and that fractures in the lower third of the femur are unsuitable because of the inability of the nail to afford firm fixation in the broad flaring medullary area there. Therefore, transverse or short oblique fractures from the subtrochanteric region to the lower third of the femoral shaft lend themselves well to this form of internal fixation. Comminuted fractures in the same region provided they may be reconstructed are not a contraindication. Firm fixation of large loose pieces is accomplished after reduction and fixation of the two major fragments with the nail by insertion of tangential screws through the cortical portion of the femur. Segmental fractures in which two to three inches or more of the femoral shaft may be displaced as a separate fragment are well treated in this way especially because remaining periosteal attachments can be allowed to remain undisturbed thus aiding in maintainance of viability of the segment. As a matter of fact segmental and comminuted fractures with marked displacement of fragments represent extremely difficult problems of management which are greatly simplified by this technique. Pathological fractures from primary or metastatic malignancies often doom their hosts to enforced bed rest and traction throughout the few months which remain to them. Firm intramedullary fixation of these fractures allows the individual to be ambulatory in a pain-free fashion thus solving a most distressing problem. Healing of this type of fracture occurs at the usual rate as well demonstrated in *Case 3* (Table I) (Fig. 3). Obviously in primary malignancy of bone without demonstrable metastasis in which pathological fracture has occurred, appropriate attempts at curative therapy should be employed. It is the opinion of the author that dissemination of malignant cells by the intramedullary nail in the individual with a pathological fracture through an area of metastatic malignancy is an entirely academic question which is of no importance in relation to the practical problem which such an individual presents. Fractures through bone cysts are well treated by the Kuntscher[4] nail with or without curettage and placement of bone grafts as may seem indicated. In fragilitas osseum intramedullary nailing has been employed for therapy of the fracture at hand and as prophylaxis against future fractures. Epileptics with femoral shaft fractures are advantageously treated by Kuntscher's method.[4] When individuals who have sustained bilateral fractures of their femoral shafts are treated in this way, they escape the long trials of traction, suspension, or heavy spica casts which are usually associated with severe disability in the soft tissues of both lower extremities from the long continued immobilization. Multiple fractures in the same individual can be handled in far simpler fashion if the femoral shaft fracture can be fixed firmly and thereafter handled as if the fracture had not occurred. There are few contraindications. Locally extreme comminution over a distance renders intramedullary fixation insecure. Fractures in the lower third of the shaft cannot be securely fixed by the intramedullary nail. The occurence of local sepsis suggests the use of an alternative method. Compound fractures are successfully handled with the intramedullary nail if one observes the necessary and usual precautions which apply to immediate or delayed open reduction and internal fixation in that type of injury. Individuals who are not suitable operative risks by reason of their general condition are excluded. Age is not a contraindication. However, in childhood, femoral shaft fractures are handled so readily by more simple methods with little resulting disability that one would be reluctant to damage the trochanteric epiphyses or subject the individual to an unnecessary surgical procedure. Fractures in the upper third of the femoral shaft which are notoriously difficult to control because of persistent flexion, abduction, and external rotation deformity of the proximal fragment are particularly suitable for treatment by this method. Finally in view of the generally excellent results obtained in the hands of many different groups, one might add that any fracture in the upper two-thirds of the femoral shaft should at least be given the benefit of consideration of this method. Pseudarthroses and delayed union are treated in satisfactory fashion by intramedullary nailing either with or without supplementary bone grafting. Kuntscher states that even infected fractures with delayed union lend themselves well to this plan of management; however, we would be reluctant to employ this procedure under those circumstances. From the foregoing it is apparent that the indications are broad and undoubtedly encompass a far greater array of femoral shaft fracture problems than any other single method hitherto used.

We object to the closed method of insertion of the nail under radiographic control for reasons outlined previously. In a suitable candidate, general preparation is carried out by appropriate sterile preparation of the thigh and groin for twenty-four hours preoperatively. In many instances a Kirschner wire will already have been inserted in either the tibial tubercle or distal femur. This may be left for traction if needed during the operation. General anesthesia in a light plane employing sodium pentothal, nitrous oxide and oxygen, supplemented by 1 per cent novocaine directly infiltrated over the fracture site is used. The patient is placed on the sound side supported by sand bags on the regular operating table. Special thigh holders for the fracture table have been devised and are useful but not necessary. Prior to the day of surgery, a Kuntscher nail of known diameter is strapped to the lateral aspect of the sound thigh in the same plane as that in which the femur lies and x-ray films made with whatever technique yielding the least distortion, that is available. The isthmus of the medullary canal is then carefully measured and likewise the diameter of the nail as projected on the x-ray film. With the actual nail diameter known calculation of the exact size of nail to use can readily be done. It is advisable to leave about 1 mm. for clearance in order to obtain a snug fit. Proper nail length is calculated in the same way. After suitable preparation of the skin and application of sterile drapes to the lower extremity in such fashion that it may be moved freely in any direction, the fracture is exposed through an anterolateral incision between the rectus femoris and vastus latralis muscles with division of the relatively avascular and small vastus intermedius. This approach to the femur can be almost bloodless and in our experience is far less likely to produce shock than the rather brutal lateral muscle splitting incision. The fracture is identified and mobilized by minimal periosteal stripping. The proximal segment is elevated to the surface of the wound. This is aided by adduction of the thigh distal to the fracture. At this point it is well to temporarily insert the selected nail into the medullary canal especially if the fracture is near the isthmus, as a last check for size. In extremely small medullary canals a reamer of appropriate diameter may be used for enlargement to proper size and in very large medullary canals two nails may be interdigitated in such fashion that a fit may be obtained. In the majority of instances, however, the transverse isthmic diameter will lie between 8 and 12 mm., and more often between 9 and 11 mm. A sharp firm metal skewer 50 cm. long over which the hollow nail readily fits is then passed into the medullary canal of the proximal fragment and driven towards the greater trochanter until it passes through that structure and is palpable beneath the skin of the buttock. This maneuver is facilitated by adduction of the proximal segment at the hip joint.

A note of warning may be sounded at this point in relation to the type of tip which is most suitable for the guide rod. Some are made with a drill point tip—these are dangerous in that they may engage the muscles and fascial planes in the buttock and be deflected up into the back. A sharp spear point is desirable. When the tip of the skewer is palpable under the skin of the buttock, it is cut down upon and allowed to emerge. A cannulated trephine is slipped over the point of the skewer emerging from the buttock and pushed to the greater trochanter which is then perforated to allow subsequent passage of the nail through the cortex. Efforts to pass the nail through this area without preliminary trephining are often successful but may be attended by linear fracture through the upper portion of the femur, therefore, it is deemed advisable not to omit this step. The trephine is then removed, a nail of suitable size slipped over the guide and insertion begun into the medullary canal through the greater trochanter by hammering. As soon as it is apparent that the nail is well started the skewer is removed from below to prevent jamming. The nail is slowly advanced until it is visible at the distal end of the proximal fragment.

A word of caution may be inserted here in regard to the most serious operative complication—namely, impaction of a nail in the medullary canal. Reports indicate that impaction has occurred to a point where extraction or advance of the nail was impossible. Such a problem will not occur if careful preoperative measurements are made. Short temporary retrograde or distal insertion carried out when the fracture is opened readily yields information obviating such a catastrophe. Firm regular advance during final insertion of the nail from above with each hammer blow should occur—if it does not, immediately extract the nail and substitute a smaller size. Stout extraction equipment should always be available in the operating room before this procedure is begun. No nail should be used that does not have adequate provision at its end for attachment of such a device. When the nail has appeared at the end of the proximal segment, the fracture is reduced and the nail driven well down into the distal segment to a point one inch above the articular surface of the knee. It is not advisable to leave more than one-half inch of nail protrude from the greater trochanter for motion of the nail in that region produces bursae which may calcify, distend with fluid, and form rice bodies. A check roentgenogram will at this time prove valuable in determining nail length.

If one is dealing with a comminuted fracture, reduction of the fragments with as little detachment of periosteal attachments as possible should be carried out before the nail is inserted past that area. Firm fixation with screw clamps during passage of the nail followed by insertion of cortical screws for maintenance of position secures good architectural relationship of all fragments. The operative wound is closed, sterile dressings applied, the Kirschner wire removed, if present, and the patient returned to his bed with no additional support. If fixation is precarious because of factors beyond control of the operator, suspension in a Thomas splint is advisable. As experience with the method increases, it becomes apparent that the need for external support rarely exists unless one is dealing with a fracture situated extremely low in the femur. In fractures which are not comminuted and are in the upper two-thirds of the femur, regardless of their obliquity, immediate ambulation is initiated. In communicated fractures or those low in the femur, consideration should be given to modification of the above program. Active exercises of all joints through all planes of motion is mandatory and in fact it is precisely because of this and the safety of immediate full weight bearing that the whole procedure gains its value. Antibiotic therapy is a valuable supplement especially in compound fractures either old or new. As is well known, substitution of antibiotic drugs for sound surgical principles invites disaster. In uncomplicated cases, hospitalization need not exceed seven to ten days.

Theoretical and actual complications of this method of treatment should of course be avoided by intelligent management. Infection has not been a problem in this series of cases. In case number eleven, very slight drainage appeared in the left thigh after the third month which subsequently ceased following extrusion of some bone chips which had been placed about the fracture at the time of fixation. In a previous paragraph, the dangers of improper nail size were discussed. Injury to the patient or attendants may ensue from careless exposure to x-rays during a closed nailing. Similarly, injuries to vital structures may occur during blind nailing. Extrusion of the nail has been reported finally necessitating a small cross screw to hold the intramedullary nail in place. Breakage of the nail at the fracture site as the result of improper construction of the nail has been reported. Violent injury to the nailed femur has resulted in bending of the nail with angulation at the fracture site. In the cases reported, manipulation of the femur resulted in correction of the deformity in both nail and femur.[7] Atrophic thin bone may allow the nail to drive through the cortex of the distal segment. A nail which protrudes too far from the greater trochanter interferes with gluteal function and often forms a painful calcified bursa. This latter complication was noted in four cases in this series and necessitated removal of the nail in each instance. With the exception of minimal drainage in *Case 11* and painful gluteal bursa formation in *Cases 14, 10, 9, and 4* (Table I) no complicating factors relative to the operative procedure were encountered in this group of patients. The question of fat embolism from marked interference with the bone marrow has been a theoretical question raised by many.

The only individual in this series with demonstrable fat embolism developed it in the classical manner twenty-four hours after his initial injury *(Case 14,* Table I, Fig. 2). The severity of his symptoms due to this complication prevented insertion of a Kuntscher[4] nail for twenty-two days. The circumstances under which evidence of fat embolism was discovered were fortuitous because this patient had already been taken to the operating room where the presence of slight hypotension before the procedure started initiated further examination which revealed conjunctival petechiae, mental confusion, and diffuse pulmonary physical and radiographic signs compatible with fat embolism. How tempted would we have been to report fat embolism as a complication of intramedullary nailing had the procedure been completed that day!

Is it feasible to leave these massive foreign bodies in place indefinitely? At the present time, that problem is solved by experience relative to other buried prosthetic appliances which dictates removal only if their presence is detrimental to the host after their initial function has been accomplished. Nails, therefore, have been removed to date on four of these patients. The indication for removal in each instance has been the formation of a painful calcific bursa in the gluteal region. One must recall that electrolytically inert metals are universally used for making these nails and that there has been no evidence of reaction in the host bone in any instance. Extraction, of course, is not indicated until adequate bony union has occurred. It is readily accomplished at that time by exposing the proximal end of the nail which is easily palpable in the buttock through a one-inch incision and pulling the metal out. In our experience removal has been readily accomplished with slight traction using only a Kocher forcep. The bursae present probably should be excised although we know of one instance, *Case 14* (Table I), where spontaneous resolution took place following removal of the nail without excision of the bursa.

Fifteen patients in whom sixteen Kuntscher[4] type intramedullary nails (Table I) were inserted for treatment of femoral fractures have been reviewed. The patients ranged in age from sixty-four to eighteen. Ten men and five women were treated. Two compound fractures, both of which united uneventfully with no evidence of sepsis in bone or soft tissue are included in this group. Two pathological fractures, one secondary to carcinoma of the breast, and one associated with a primary sarcoma of the femur with multiple metastases were immobilized by intramedullary fixation with Kuntscher nails. One epileptic, a patient with a transverse fracture through the mid femur is included. Two individuals with segmental fractures of the femur, one in the upper third and the other at the juncture of the lower and middle thirds, both obtained excellent results with survival of the large detached femoral fragments. Bilateral femoral fractures occurred in a thirty-five-year-old woman in whom several other severe injuries were present. This operative procedure after two months was followed by sinus formation in the left thigh with slight drainage which ceased after several bone fragments were extruded that had previously been introduced as grafts. Four closed transverse fractures in the middle third of the femur were electively treated by this method as well as three oblique comminuted fractures, one of which was in the upper third of the femoral shaft in a below-the-knee amputee.

The postoperative day on which patients were allowed to bear weight varied from the second to the sixtieth. This great variation was due in large part to the high incidence of associated injuries and to a lesser degree in certain cases because of instability in those fractures occurring low in the femur. One must also add to this in the early portion of the series a certain reluctance on the part of the surgeon to throw caution to the winds and allow full weight bearing with complete reliance on a new untried method.

TABLE I

Patient	Age	Sex	Site and Type of Fracture	Post-operative Day of Ambulation without Weight	Weight Bearing Days Postoperative		Callus by X-Ray Days Postoperative		Complications	
					Partial	Full	First Seen	Adequate for Weight Bearing	Operative	Postoper
1. O.P.	57	M	Left simple transverse midshaft comminuted	2	82 (against advice)	131	15	150	Loose fragment difficult to reduce. Once reduced, felt secure so no screw used for fixation	Ileus loose slipped 10 Placed in sion till postoperat
2. E.K.M.	64	F	Left simple transverse mid-shaft	4	10	30	20	162	None	None
3. J.S.C.	26	F	Right simple transverse junction mid and lower ⅓	2	53	110	12	142	None	None
4. A.J.C.	25	M	Right simple comminuted junction upper mid ⅓	8	8	20	28(?)	170	Unsuccessful attempt to pass nail with open reduction.	None
5. M.I.W.	62	F	Right pathologic (breast) junction upper and mid ⅓	3	94	187	22	101	None	Mild ileus
6. R.M.	24	M	Right simple transverse mid ⅓	39	45	78	19	140	None	None
7. P.Z.	60	M	Right spiral—simple junction upper and mid ⅓	5	140	160	7	120	None	None
8. P.A.M.	64	M	Left pathological fracture junction proximal and mid ⅓	22	30	55	12 marked at 8 weeks	140	None	None
9. A.F.	18	F	Left simple segmental or double fracture with 2-inch loose fragment mid ⅓	44			82	170	None	None
10. D.J.	19	M	Left simple comminuted with two large fragments, junction upper and mid ⅓	10	20	about 60		152	None	None
11. B.T.	35	F	Right simple comminuted junction mid and upper ⅓	60	62	80	50	160		
			Left simple transverse junction mid and lower ⅓	8-29	62	80	69(?)	Union 1-5-51	None	Slight drain leg.
12. T.W.	20	M	Right compound mid ⅓ right femur	10	20	25		170	None	None
13. J.H.	37	M	Left simple oblique lower ⅓	5	25	Not at present	22	Still Under Treatment	Foot drop pre-operatively while in traction	None
14. F.F.	50	M	Right upper ⅓ femur. November 2, 1951.	4	4	second week	20	140	None	
15. D.S.	20	M	Compound fracture left femur, middle ⅓	5 weeks		five weeks		140	None	None

TABLE I

l Result	Concomitant Injuries of Significance or Other Diseases	Size of Nail	Etiology of Fracture	Day of Operation	Operative Technique and Approach	Miscellaneous
vith normal on	None	9 x 38 mm.	Leg run over by truck	Day of admission October 4, 1951	Antero-Lateral incision, open reduction	
vith normal on	None	10 x 38 mm.	Stumbled and fell	Day of admission June 11, 1951	Lateral incision, open reduction	
th normal n	Fracture of ribs, right 3, 4, 5.	10 x 40 mm.	Auto accident—driver	10 days post injury, December 9, 1951 (Hospitalized elsewhere 9 days)	Lateral incision, open reduction	
th 20 degree on of knee	Simple fracture left patella (operated) 11-29-49, fracture carponaricular, right (Epileptic)	9 x 40 mm.	Fell from porch roof	10 days post injury, November 15, 1949	Open reduction, lateral incision (Attempted closed but failed)	Nail removed, painful bursa
ith function	Carcinoma of right breast, metastasis to pelvis, lungs, ribs, skull, scapula	9 x 36 mm.	Rolled over in bed	October 19, 1949	Lateral incision, open reduction	Received testosterone 100 mgm. tri-weekly
unction	Compound comminuted fracture right little finger, extensive lacerations right thigh.	8 x 46 mm.	Motorcycle	9 days post injury, November 22, 1950	Lateral incision, open reduction	Nail removed September, 1951, painful bursa
unction ation stump	Cirrhosis, diabetes (mild), bilateral amputation below knee	15 x 50 mm.	Fell in home (on artificial limbs)	19 days post injury, February 4, 1949	Closed reduction, guide and nail inserted from greater tuberosity under x-ray control	Nail removed May 1, 1950, painful bursa
expired 10 s after opera- om osteogenic a	Pathologic fracture due to osteogenic sarcoma, pathologic fracture of both humeri	10 x 44 mm.	Patient being lifted from chair	5 days post injury, August 17, 1950	Lateral incision, open reduction	Died May, 1951
	Compound fracture, left tibia	9 x 42 mm.	Motorcycle collided with car	6 days August 16, 1949	Lateral (nail curved)	Nail removed, painful bursa
function	Simple fracture, left patella	11 x 46 mm.	Auto accident	14 days post injury, December 28, 1949	Open reduction, lateral incision, 5 transfixtion screws to hold loose fragment, nail curved	Nail removed, painful bursa
ete follow-up	1. Fracture mid shaft, right humerus, compound. 2. Fracture, right fibula. 3. Fracture, right clavicle. 4. Basal skull fracture. 5. Multiple lacerations. 6. Fracture, right ilium.	10 x 44 mm.		30 days post injury, June 29, 1950	Antero-lateral bone graft from right ileum to fracture, nail curved	
	Above	9 x 44 mm.	Train auto accident	11 days post injury, June 10, 1950	Open reduction. Lateral incision. Bone graft to fracture site from left ilium.	
with normal on	1. Cerebral concussion 2. Multiple lacerations face	9 x 44 mm.	Auto accident	2½ hours after injury, September 21, 1950	Through site of compound wound laterally	
y to state	Smith fracture left wrist	11 x 42 mm. 12 x 44 mm. nails interdigitated. Canal measured 15 mm.	Motorcycle	August 5, 1952	Antero-lateral incision, two nails used, open reduction	
vith normal on	1. Severe fat embolism. 2. Severe urticaria due to penicillin	11 x 44 mm.	Auto accident	November 24, 1951	Lateral muscle-splitting incision	
vith normal on	Simple fracture left ulna; fracture, right second metacarpal	9 x 44 mm.	Auto accident	September 9, 1951	Lateral incision, compound wound closed primarily	Painful gluteal bursa necessitated removal of nail

At present it can be stated that in the absence of severe comminution, or site of fracture in the lower third of the femur, weight bearing can be started as soon as the patient's general condition permits. Study of the rate at which union took place in these fractures is interesting because one of the criteria upon which clinical union of a fracture is judged, namely, stability, was unreliable because of the presence of the immobilizing nail. Similarly tenderness of the callus elicited by springing the fracture failed to assume its usual significance. From a practical standpoint, the exact time of bony union sufficient to bear weight was of little importance because all patients walked well long before this time. In an effort to establish the healing rate, the appearance of enough well calcified callus bridging the fracture capable of bearing weight with no support either internal or external was designated as the time of the union. Difficulty in determining the exact day of union appeared insurmountable because x-rays in almost serial fashion every two to three weeks would have been necessary. It must also be understood that these determinations of union time in femoral shaft fractures treated by this method are conservative and err on the side of marked callus formation. With these things in mind one must accept the given time as an approximation only. It would be possible to state, however, that by the fifth month, union had progressed to a point in all fractures where beginning weight bearing would be considered had the fracture been treated by other methods.

It is interesting to note that one of the most rapid unions occurred in *Case 5* (Table I), a patient with a pathological fracture secondary to carcinoma of the breast where, as is well illustrated by Figure 1, union was strong after three and a half months. As described by Bohler, Kuntscher, and others, a very early cloud of so-called periosteal callus developed often by the tenth or fifteenth day. In all cases in which nails were removed, dense callus approaching the appearance of cortical bone was present (Fig. 1).

There were no complications encountered during the operative procedures and no deaths in the group of patients reported occurred either during the postoperative period or hospital stay. All patients were discharged from the hospital. In two patients, mild ileus was noted. In one individual, a loose fragment reduced at the time of surgery but not fixed by screws became displaced in the postoperative period. Union, however, occurred in the usual length of time. Firm bony union occurred in each case. In only two patients were no concomitant injuries, sequelae of injury, or other disease states absent. Many of these individuals were severely injured patients with multiple fractures and severe head or thoracic traumata. The smallest nail used measured 9 mm. in diameter by 39 cm. in length. The largest was 16 mm. in diameter and was obtained by interdigitating a 12- and an 11-mm. nail. One closed reduction and blind insertion of the nail was done in an oblique fracture in the upper third of the femur in a patient who had a previous amputation of that extremity below the knee. The remainder were open procedures. The etiology of these fractures varied from insignificant injury in the pathological cases to severe injuries sustained in motor vehicle accidents. In determining the optimum time of operation, one must be well aware of the fact that femoral shaft fractures rather rapidly become firmly fixed in positions of displacement and shortening. Three weeks of delay may increase the difficulty of open reduction to a considerable extent. For that reason without exhibiting undue haste, one should attempt to reduce the fracture and insert the nail as soon as possible. Considerable delay was present in many of these cases between the time of injury and intramedullary fixation because of poor general condition due to associated injuries in these individuals. Compound fractures if seen early may be operated upon safely by this method as soon as adjuvant therapy has stabilized the patient. Whether the compound wound will be closed after proper debridement and cleansing with employment of a new incision for reduction and insertion of the nail, or enlarged and used for that purpose, will depend on the location and nature of the wound.

Several of these cases present features especially pertinent to the method being discussed and are presented below:

Case 5.—M. W., aged sixty-two (Fig. 1), was admitted to the Minneapolis Hospital on October 5, 1949, with the complaint of severe pain in the right thigh occurring suddenly as she rolled over in bed. She stated that eight months previously a right radical mastectomy for carcinoma had been performed. X-ray examination of the pelvis and femurs revealed a fracture in the upper third of the right femur through an area typical of carcinomatous metastases. Numerous other areas of similar bony metastasis were seen in the pelvis, ribs, and skull. Shortly after admission to the hospital, a Kirschner wire was passed through the lower portion of the femur and skeletal traction in a Thomas splint instituted. On October 19, 1949, open reduction of the fracture was carried out with insertion of a Kuntscer[4] nail for fixation. Postoperatively all support was discarded and the patient immediately became ambulatory. Full weight bearing on that extremity without pain was possible. Administration of testosterone was started and the patient was discharged from the hospital. Subsequent x-rays reveal far advanced bony union on January 1, 1950. This is indeed a marked contrast to the tribulations of long-continued skeletal traction with prolonged recumbency necessitated by closed treatment.

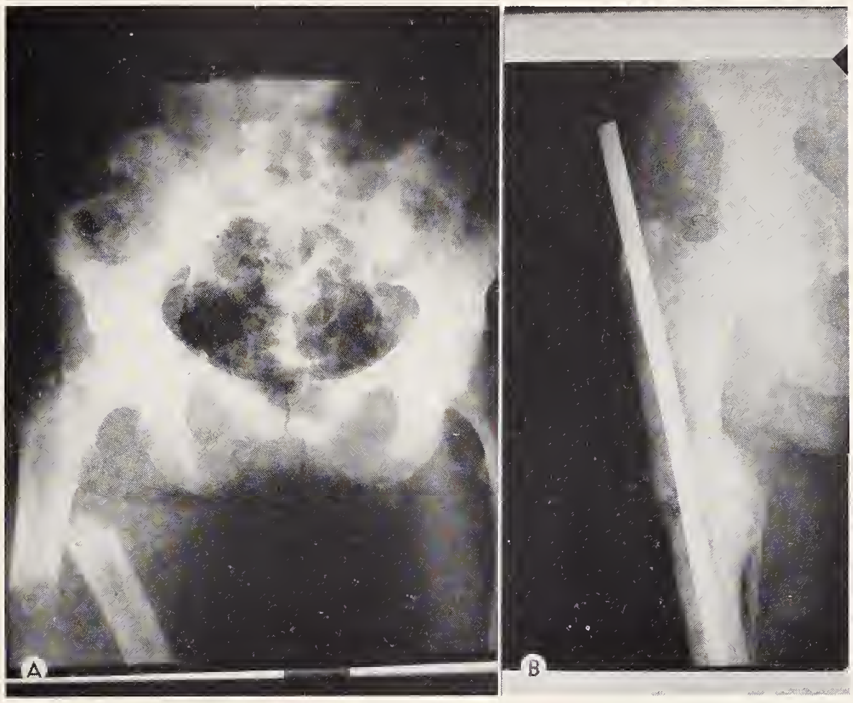


Fig. 1. M. W., aged sixty-two. (A) Pathological fracture right femur, October 5, 1949; intramedullary nail inserted October 19, 1949. (B) Bony union is well advanced by January 1, 1950.

Case 1.—O. P., aged fifty-seven, was admitted to the Minneapolis General Hospital, October 4, 1951, having sustained a transverse fracture through the mid portion of the left femoral shaft after being run over by a truck. On the day of admission to the hospital, open reduction and internal fixation of the fracture with an intramedullary nail was carried out. During the surgical procedure, a loose fragment was found which had not been visualized on the preoperative film. Manual replacement of this fragment was carried out. Fixation at the time of surgery did not appear to be adequate for immediate weight bearing because of this loose fragment. A review of postoperative roentgenograms on the tenth day after surgery persuaded us to place the patient's thigh in suspension for a period of fifty days. This conservative attitude may appear unnecessarily extreme but does indicate that in an occasional case some additional support must be at least considered if mechanical factors relative to fixation of the fracture are such that loss of position may otherwise ensue. Examination of subsequent x-rays on December 26, 1952, and July 23, 1952, show progressive bony union.

Case 7.—P. Z., aged sixty, was admitted to the Minneapolis General Hospital on January 17, 1949. This patient had bilateral below-the-knee amputations and while negotiating a stairway, he fell, sustaining a fracture in the subtrochanteric region of the right femur. The extremity was placed in skeletal traction after admission to the hospital. However, in addition to the difficulty encountered in obtaining and maintaining reduction of this fracture, it soon became apparent that the long-continued immobilization necessary for healing would result in disability so great in the fractured limb and in the rest of the patient's body as to jeopardize gravely future active ambulation. Intramedullary nailing appeared to readily solve this problem and on February 4, 1949, this was carried out employing closed reduction and insertion of the nail by the blind method. The patient began to walk on the fifth postoperative day and at the end of the fifth month was bearing full weight on his prosthesis. On May 1, 1950, the nail was removed because of a painful bursa which had developed in the gluteal region. Good bony union was

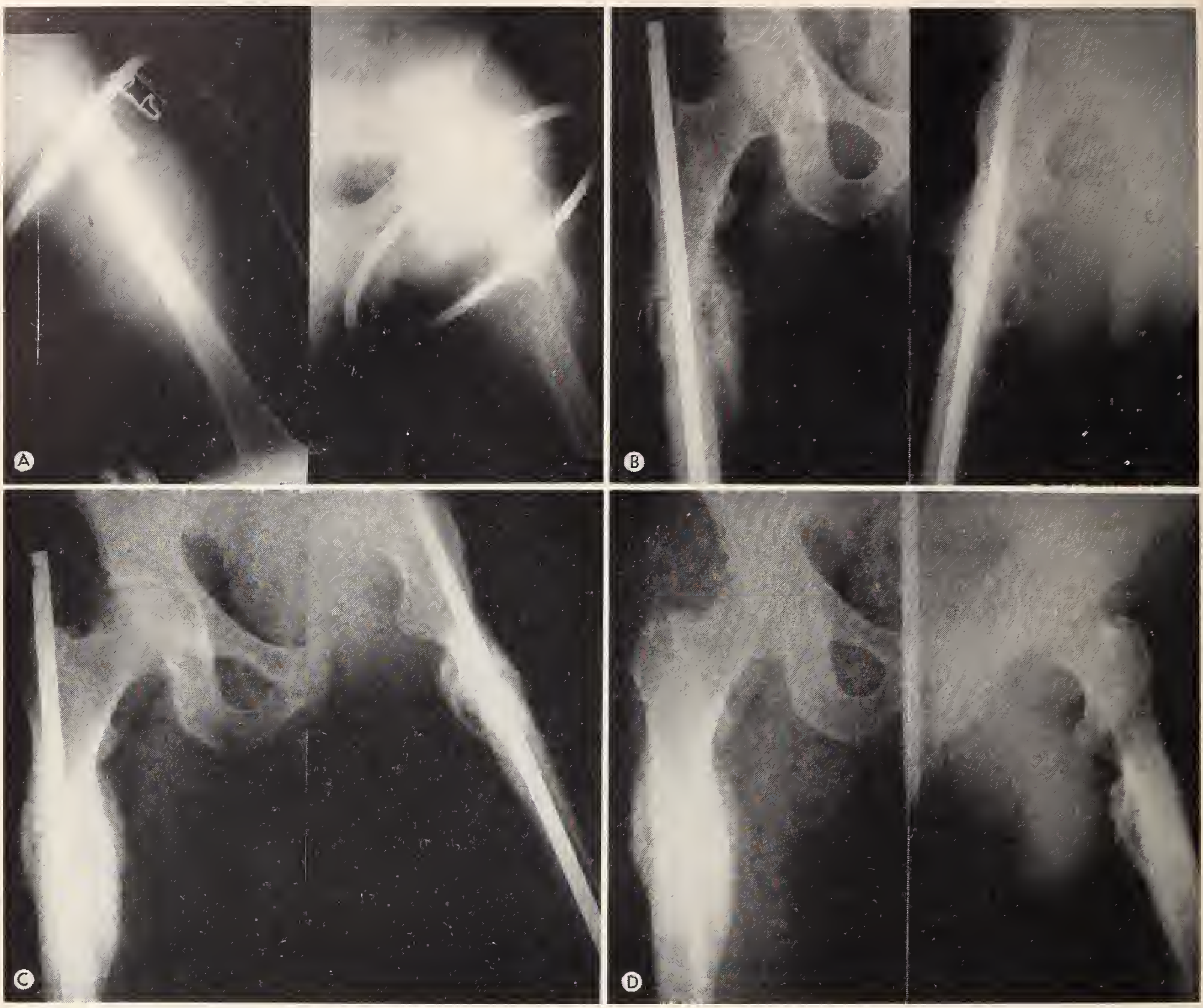


Fig. 2. F. F., aged fifty. (A) Fracture through upper one-third, right femoral shaft, November 5, 1951. (B) Note formation of substantial callus by January 18, 1952, following intramedullary fixation. (C) Healing of the fracture is almost complete, April 25, 1952. (D) The nail has been removed. Note calcified bursa above greater trochanter, July 3, 1952.

apparent by x-ray in this fracture by the end of the fourth month. In restrospect, we are convinced that much earlier weight bearing would not only have been possible and safe but advisable in this instance.

Case 14.—F. F., aged fifty (Fig. 2). This man was admitted to the Northwestern Hospital on November 5, 1951, eight hours after an automobile accident. Exposure on the roadside during cold, inclement weather for three hours occurred before aid was rendered to the patient. He sustained a fracture in the upper third of the right femur which was somewhat comminuted and slightly oblique. Treatment of this fracture by insertion of an intramedullary nail was considered feasible and on the second hospital day, he was taken to the operating room for that purpose. Arterial hypotension was noted in the immediate preoperative examination by the anesthetist. Further investigation revealed conjunctival petechiae fine rales throughout both lungs and drowsiness of greater degree than expected from the preoperative medication. The operation was, therefor, postponed. X-ray examination of the lungs showed the presence of diffuse hazy infiltration throughout both fields. On the following day skin petechiae and mild delirium were noted. A clinical diagnosis of fat embolism was made and for the time being this fracture was treated by skeletal traction. Penicillin was administered because of the pulmonary findings. The signs and symptoms described disappeared gradually during the next ten days. Preparations were again made for insertion of an intramedullary nail when giant urticaria associated with periodic incomplete laryngeal obtsruction was noticed. Treatment with epinephrine and antihistaminic drugs proved ineffectual for control of this problem. Eventually cortisone was administered which promptly controlled the allergic reaction thought to be due to penicillin. Meanwhile good reduction of the fracture was difficult to maintain and callus began to appear with the bony fragments in poor position. Cessation of cortisone therapy was followed by return of severe allergic symptoms on

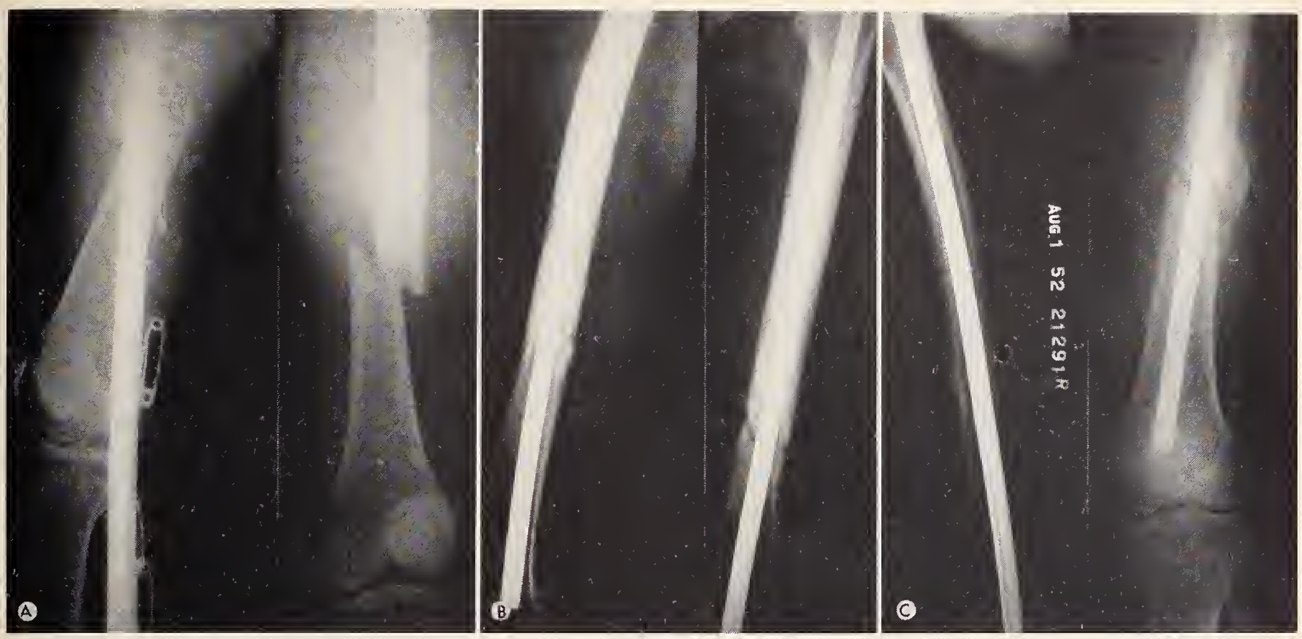


Fig. 3. J. C., aged twenty-six. (A) Short oblique fracture through lower one-third right femoral shaft, December 8, 1951. (B) Fracture line is still apparent, callus formation not marked, March 28, 1952. (C) Union of the fracture is advancing, August 1, 1952.

several occasions. On November 24, 1951, open reduction and internal fixation of the fracture by a Kuntscher[4] intramedullary nail was carried out with no untoward incident. Cortisone therapy was continued for approximately fifteen days following surgery. Wound healing occurred normally. The patient became ambulatory on the fourth postoperative day and immediately was allowed to bear full weight. Subsequent radiographs (Fig. 2) reveal rapid union of the fracture. Painful bursa formation in the gluteal region necessitated removal of the nail on June 12, 1952, with excision of the bursa. Normal function returned to the lower extremity. It is interesting to note that in the entire series, this case of fat embolism is the only clinically apparent one.

Case 3.—J. C., aged twenty-six (Fig. 3), was admitted to the Minneapolis General Hospital on November 30, 1951, for treatment of an oblique fracture in the lower third of the shaft of the right femur sustained several days previously in an automobile accident. Open reduction with insertion of a Kuntscher[4] nail was carried out on December 9, 1951. The patient was allowed to become ambulatory on the second postoperative day. Weight bearing was not allowed until the sixth week because of a cautious attitude which arose from the location of the fracture in the lower third of the bone together with the obliquity of the fracture. Subsequent radiographs revealed increasing bony union. Normal function ensued in that extremity. Inclusion of this case illustrates the lowest practical level at which one may expect to secure reasonable fixation by the intramedullary nail.

Case 13.—J. H., aged thirty-seven, was admitted to Minneapolis General Hospital on July 18, 1952, following an automobile accident in which he sustained a comminuted fracture in the lower third of the left femoral shaft. Initial examination appeared to indicate closed treatment of this fracture with skeletal traction in suspension because the location and comminution of the fracture would render internal fixation insecure. Reduction, however, proved difficult and on August 5, 1952, open reduction was carried out with the thought that if the fragments of the distal segment were not too loose intramedullary and screw fixation might be used. If this should prove undesirable, standard methods of internal fixation could be relied upon. Measurements of the medullary canal showed its smallest diameter to be 15 mm. The largest nail obtainable at the time was 12 mm. It proved possible to use intramedullary fixation in this instance by interdigitating two Kuntscher[4] nails of 12 mm. and 11 mm., respectively, and inserting both into the femur. Supplementary screw fixation in the cortex of the femoral shaft was used, thus fixation which was clinically firm was secured. Radiographs depicted the large medullary canal and the two nails in place. This patient is ambulatory at the present time bearing about one-half his full weight.

Case 9.—A. F., aged eighteen, was admitted to the Minneapolis General Hospital on July 10, 1949, following a motorcycle accident in which she sustained a comminuted (segmental type) fracture in the middle third of the left femoral shaft and a compound comminuted fracture of the left tibia with extremely extensive lacerations of the leg. Shortly after admission to the hospital, debridement, open reduction, and internal fixation of the tibial fracture with primary closure was carried out. The femoral fracture presented a loose fragment two and one-half inches long which lay transversely. This fragment represented a segment of the entire femur at that point. Conventional methods of closed reduction with sustained skeletal traction obviously were inadequate for treatmnt of such a fracture. Internal fixation with application of a plate would undoubtedly have resulted in much periosteal stripping of all fragments jeopardizing the already precarious blood supply to the central fragment. Intramedullary fixation was readily accomplished with minimal operative disturbance of blood supply to the involved bone. Radiographs taken on July 14, 1950 (one year later) show complete bony union to have occurred. It is interesting to note the atrophy which has occurred in the free segment. Subsequently the tibial fracture required application of an iliac bone graft in order to secure union. Two difficult fractures occurred in a single extremity in this instance. Intramedullary fixation of the unusual femoral fracture permitted that fracture to be almost immediately disregarded when considered in relation to the patient's other injuries. In addition, necrosis of the central fragment with its attendant great disability was avoided.

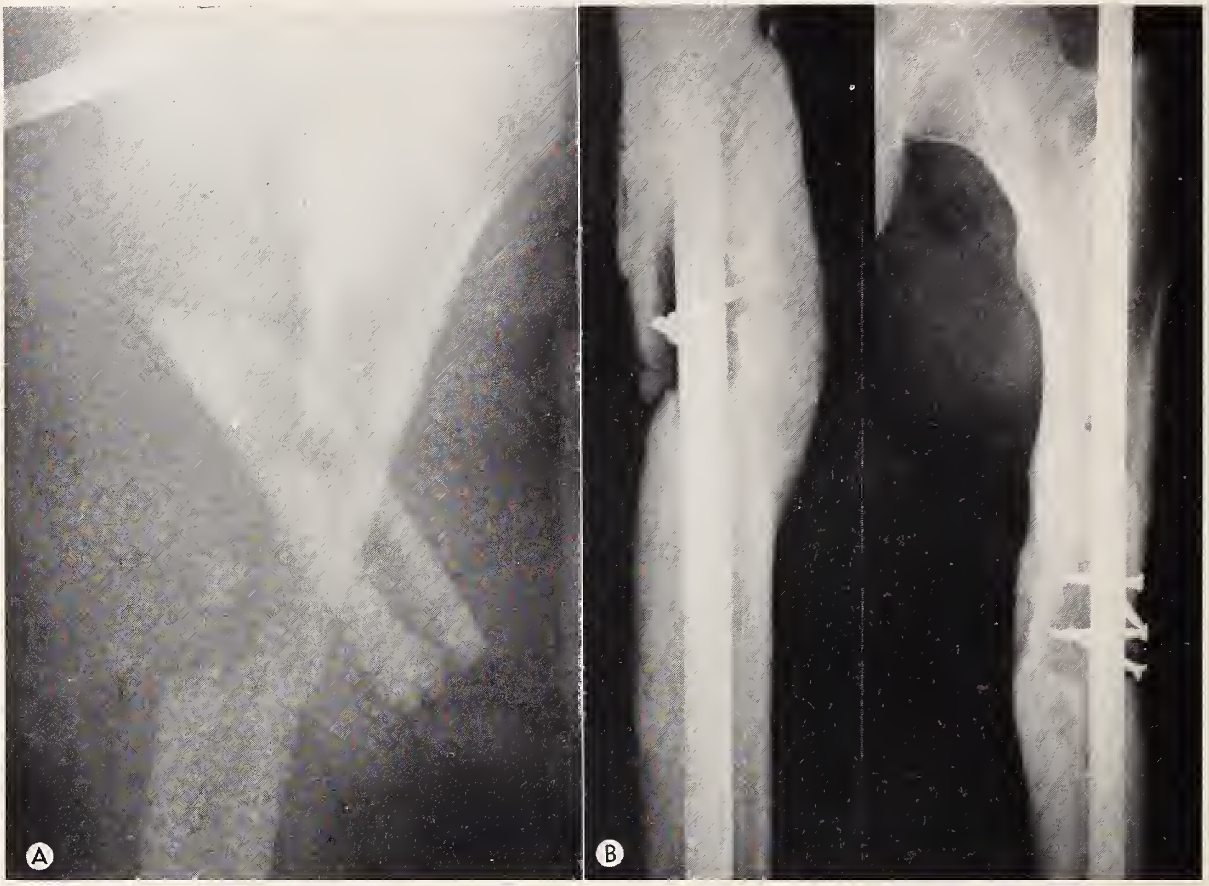


Fig. 4. D. J., aged nineteen. (A) Radiograph December 14, 1949, illustrating comminuted fracture with a large piece of the femoral shaft markedly displaced. (B) Radiograph December 11, 1951, reveals bony union. Note atrophy and marked absorption of bone in the region of the loose fragment.

Case 10.—D. J. (Fig. 4) was admitted to the Minneapolis General Hospital on December 14, 1949, following an automobile accident in which he sustained a comminuted fracture of the left femur in its upper one-third and a comminuted fracture of the left patella. The femoral fracture presented a large fragment which lay obliquely. Closed reduction with long continued skeletal traction for maintenance of position was unlikely to result satisfactorily for the femoral fracture and would certainly enhance future disability in the knee joint which was the site of a patellar fracture. Solution of this problem by fixation with a Kuntscher nail and several cortical screws in the loose fragment on December 28, 1949, allowed independent treatment of the fractured patella. Excision of the loose fragments and suture of the patellar tendon was carried out ten days later with appropriate postoperative mobilization of the joint in the same fashion as if the femoral fracture were not present. X-rays on December 11, 1951, show good bony union of the fracture with much atrophy of the loose segment which at operation was found to have been stripped completely free of its soft tissue attachments by the injury and was replaced as a free fragment. Subsequent bursa formation in the buttock necessitated removal of this nail.

Case 4.—A. C., aged twenty-five, was admitted to the Minneapolis General Hospital on November 5, 1949, following a fall from a porch in which he sustained a transverse fracture of the right femur, a closed fracture of the left patella and a fracture of the right carpal navicular bone through its waist. The occasion of this fall was an epileptic seizure, to which the patient had been subject for many years. Patients with epilepsy present special problems when necessity arises for treatment of fractures, especially in the long bones. Displacement and refracture are ever present hazards when convulsions occur. Intramedullary fixation seemed to afford good protection to this patient as well as the other benefits which accure following its use. Accordingly on November 15, 1949, a Kuntscher[4] nail was inserted into the medullary canal of the right femur for treatment of that fracture. Subsequently the left patellar fracture was sutured and the patient mobilized. Serial x-rays depicted the healing process from beginning to end in this instance. Final roentgen examination on August 29, 1951, showed complete healing of this fracture and the nail removed. The latter procedure was carried out because of bursa formation in the buttock. Multiple fractures in an epileptic were simplified by intramedullary fixation of the femoral fracture in this case.

Summary

The method of internal fixation of femoral fractures by open reduction and insertion of a large intramedullary nail is one which has proven safe, efficient, and productive of excellent end results. The advantage of fixation secure enough to allow immediate mobilization of an individual with a femoral shaft fracture is readily apparent. Dangers inherent to the method are resolved by careful preoperative evaluation, proper operative technique, and an appreciation by the surgeon of the manifest problems peculiar to the control of all fractures. Sixteen fractures in fifteen patients are presented with the known end result. The method has proven satisfactory in this group of individuals who collectively represent most of the special indications for which use of the intramedullary nail is of value.

Conclusions

On the basis of this study, the following predications are possible. Intramedullary fixation of femoral fractures should be considered of great value in:

1. Pathological fractures.
2. Segmental fractures.
3. Certain comminuted fractures.
4. Fractures in the upper third of the femoral shaft.
5. Individuals requiring treatment for multiple fractures.
6. Grand Mal epilepsy.
7. Selected cases with transverse or short oblique fractures above the lower third of the femur.

Bibliography

1. Bohler, L.: Medullary Nailing of Kuntscher. London: Balliere, Tindall & Cox, 1948.
2. Eder, P.: Personal Communication.
3. Groves, E. W. Hey: Ununited fractures with special reference to gunshot injuries and the use of bone grafting. Brit. J. Surg., 6:203, 1918.
4. Kuntscher, G.: Die Marknagelung von Knochen bruchen. Arch. f. klin. Chir., 200:443-455, 1940.
5. Lane, U. A.: On the advantage of the steel screw in ununited fractures. Lancet II, 1500, 1893.
6. Venable, C. H.; Stuck, and Beach, A.: Effects on Bone of the Presence of Metals: Bases on Electrolysis. Ann. Surgery, 105:917, 1937.
7. Watson-Jones, R. et. al.: Medullary nailing of fractures after 50 years, with review of difficulties and complications of operation. J. Bone and Joint Surg., 32:654-729 (Nov.) 1950.
8. Zierold, A. A.: Reaction of bone to various metals. Arch. Surg., 2:365-412 (Sept.) 1924.

SOLITARY NONPARASITIC CYSTS OF THE LIVER

(Continued from Page 836)

Bibliography

1. Abolfathi, H.: Kyste solitaire nonparasitaire due foie. Sem. Hop. Paris, 28: Suppl. 13, pp. 141-143, 1952.
2. Attix, F. F.: Nonparasitic cysts of the liver. Lancet, 59:38, 1939.
3. Bland-Sutton, J.: Solitary nonparasitic cysts of the liver. British M. J., 2:1167, 1905.
4. Boyd, S.: Nonparasitic cysts of the liver. Lancet, 1:951, 1913.
5. Caravati, C. M.; Watts, T. D.; Hopkins, J. E. T., and Kelly, F. R.: Benign solitary nonparasitic cysts of the liver. Gastroenterology, 14:317-320, 1950.
6. Cousins, J. W.: Large hepatic cyst simulating an ovarian tumor. British M. J., 11:700, 1874.
7. Davis, C. R.: Nonparasitic cysts of the liver. Am. J. Surg., 35:590-594, 1937.
8. Jennings, W. K.: Solitary nonparasitic cysts of the liver. Surgery, 6:507-510, 1939.
9. Montgomery, A. H.: Solitary nonparasitic cysts of the liver in children. Arch. Surg., 41:422, 1940.
10. Munroe, H. S.: Solitary nonparasitic cysts of the liver. Ann. Surg., 116:751-762, 1942.
11. Ochsner, E. H.: Unilocular cyst of the liver. Ann. Surg., 107:829, 1938.
12. Stoesser, A. V., and Wangensteen, O. A.: Solitary nonparasitic cysts of the liver. Am. J. Dis. Child., 38:241-257, 1929.
13. Witzel, O.: Hemicephalus Mit Grossen Lebercysten Cystenierren und Einer Reihe Anderer Missbild Ungen. Centralbl. f. Gynak, 4:561, 1880.

ALLERGIC REACTION TO PARA-AMINOSALICYLIC ACID

Report of Case

ROBERT P. KOENIG, M.D.
Paynesville, Minnesota

RELATIVELY few instances of marked systemic allergic reactions have been noted in the use of para-aminosalicylic acid, in spite of its widespread use in tuberculosis therapy.[3]

Since the introduction of PAS in treatment of tuberculosis, gastrointestinal irritation and varying forms of skin eruptions have been noted, but few serious allergic phenomena have been reported.[1,3,4] Indeed, some experimental evidence exists showing that PAS has an antagonistic effect on allergic reactions.[5]

The case presented here represents a more marked systemic response to PAS than is usually seen and illustrates the necessity of keeping allergic responses to drugs in mind in evaluating acute serious illness. A case reported by Hall[2] further illustrates this necessity, wherein a patient under penicillin therapy was subjected to an exploratory laparotomy—without revealing any surgical condition. Later review of this case convinced the author that the symptoms and findings were due to an acute allergic response to penicillin.

Case 1.—This case is that of a twenty-two-year-old single Mexican girl who was admitted to Ancker Hospital, Saint Paul, with bilateral apical tuberculosis on June 4, 1952. She was started on streptomycin, one gram bi-weekly and PAS, 12 gm. every day in divided doses of 4 gms. During the first month of therapy, the patient noted only occasional loose stools and vague, mild abdominal complaints.

However, on July 5, 1952, after one month of PAS and streptomycin therapy, she complained of generalized itch and skin rash, and later on of dizziness and nausea. Her temperature rose to 102° F., orally, and the complaints persisted, including frequent emesis, general malaise, severe headache and myalgia. Her blood picture revealed a rising eosinophilia of from 1 per cent on admission (prior to PAS and streptomycin) to 16 per cent on July 14, 1952.

On July 11, 1952, the patient complained of severe abdominal pain, especially in the right lower quadrant. Examination at this time showed rebound tenderness in the lower abdomen and marked tenderness on pelvic examination. A diagnosis of pelvic inflammatory disease was entertained at this time, but cervical smears and cultures were negative.

The patient was treated with penicillin and terramycin, and because she complained of "feeling sick" after taking PAS, this, as well as streptomycin, was discontinued. The patient recovered rapidly and was without complaint until August 2, 1952, when PAS, without streptomycin, was given through an error. Following one dose of PAS (3 gm.) the patient immediately developed her previous complaints again. Examination revealed rebound tenderness in the lower abdomen, active bowel sounds and a markedly tender cervix. Her temperature rose to 104°, pulse rate was 144 and her lungs were clear. A peripheral blood study revealed a white blood count of 16,200 with a differential of 86 per cent PMN, 3 per cent lymphocytes, 2 per cent monocytes, and 9 per cent eosinophiles. A repeat blood study the same day showed a rise in the eosinophiles to 19 per cent. A flat plate of the abdomen was interpreted as showing a possible ileus and free fluid in the peritoneal cavity.

The patient was again given antibiotics (terramycin), but PAS was discontinued after the one offending dose, and antihistamines were given. The patient improved during the next two days. A repeat blood study revealed an eosinophilia of 42 per cent at that time. Subsequent blood studies showed a gradual disappearance of the high eosinophilia.

There was no history of any previous allergic reactions, even to drugs related to PAS, such as aspirin. A patch test applied after recovery using powdered PAS produced a marked red, elevated, moist lesion while controls were negative.

The patient was subsequently treated with INH and successfully underwent surgical treatment for her tuberculosis.

Bibliography

1. Boudin, G., and Job, J. C.: Accident mortel brutal de lendemain d' une unique et premiese perfusion intraveineuse de PAS. Bull. Soc. med. hop., Paris, 68:7-8, 1952.
2. Hall, Wendell H.: The abuse and misuse of antibiotics. Minn. Med., 35:629-32 (July) 1952.
3. Kierland, Robert D., and Carr, David T.: Reactions to para-aminosalicyclic acid. Proc. Staff Meet., Mayo Clinic, 24:539-543, 1949.
4. Kniest, W.: Schwere allergische Reactionen gegen p-Aminosalizylsoure. Deutsch. med. Wchnschr, 77: 676-7 (May 23) 1952.
5. Trethwie, E. R.: Effect of PAS on allergic processes. Med. J. Australia, 1:638-639 (May 10) 1952.

History of Medicine In Minnesota

MEDICAL HISTORY OF THE COUNTY OF YELLOW MEDICINE

MILDRED B. LEE
Granite Falls, Minnesota

(Continued from the July issue)

In 1885 Canby had a population of 500, and Granite Falls was a city of 1,200. In that year Dr. Carlos Lord Chambers of Mantorville opened offices in Canby. Another doctor to locate there was Dr. Albert R. Torgersen, graduate of a Norwegian medical school.

Dr. Chambers was just beginning medical practice. He found time to sing on the programs of the Canby Literary Society, to head committees, to act on the school's Board of Examiners. For a time he was county physician for the west ten townships of the county. Dr. Torgersen had some difficulty convincing people that he was qualified to practice in Minnesota, according to the *Canby News,* but he was a determined man and soon built up a good practice. He was also a graduate pharmacist, and in 1888 bought out the Clarkfield drug store and removed to that village, the first doctor to settle there.

In 1885, Dr. Florado H. Wellcome gave up the practice of medicine at Granite Falls to go into banking. His real interest had always been in business, and for a number of years he had been interested in a loan agency. This was a lucrative business in the pioneer days, for times were hard, money scarce, and interest rates very high. It was common practice to demand of the borrower who wanted $100 that he execute a note for that amount, at ten or twelve percent interest, and pay $10 as a commission for making the loan. Eastern capital could be secured at a low rate of interest for investment or loans, and a search of the records would reveal some famous people as mortgagees in this remote region at that time. Dr. Wellcome also loved to travel. The Wellcomes were childless, for their daughter, Mamie, had died in infancy, and they traveled east and west, to Europe, Egypt, and the Holy Land. In 1900, the doctor removed to Minneapolis to continue his successful business career.

Two "lady doctors" were announced by the *Granite Falls Tribune* in the fall of 1886. They were Adelia M. Higley and Ella Webster, and they rented an office over the post office. However, they found that the State Board did not recognize the school from which they had graduated, and therefore they could not get licenses to practice.

The eighties were not prosperous years, but they were nevertheless years of progress. The sod and log houses had been replaced by houses of frame construction. Schools and churches had been built in every community. But farm prices were very low, in consequence of which every kind of business suffered. High freight rates and unfair discrimination on the part of railroad companies added to the farmers' troubles, for the railroad companies which had been largely financed and much pampered by government had grown powerful and greedy. They arbitrarily fixed freight rates and made discriminatory regulations which in some cases were almost confiscatory. The cost of getting grain to market was often in excess of the amount derived from the sale of it. For redress of such grievances farmers in Yellow Medicine County lent support to new third parties such as the Greenback Party and Farmers Alliance, and put their own candidates in the field.

The people of Granite Falls had visions of prosperity when traces of gold were found in the Minnesota river silt, and indications of the precious ore caused a mining company to sink a mine shaft near Minnesota Falls. The mine was called the Ben Harrison. The mine shaft reached a depth of eighty-five feet by the time the first ton of ore was ready for shipment. After this shipment activities ceased, probably because the gold was found in small quantity; many local citizens had invested heavily in the mine, and it may well be also that the man who years ago told the writer he had "salted" that mine had actually something to do with it.

Coal also was found, on the Finnis farm; but this too in quantities too small to be profitably developed. Still, the papers of 1886 continued to advertise coal from the local mines at Redwood, as well as brick from the old brick yards on the Yellow Medicine. Traces of silver and lead were also found in the county.

In the face of such disappointments the forward looking citizens of Granite Falls nevertheless approached the County Board with an offer to contribute a specified amount toward a new Court House, and posted a bond for payment. This project had been entertained by the county board for some time, and with this encouragement they issued bonds under a special act to raise $15,000 for a new building. In November, 1888, an architect, Frederick E. Hoover of Minneapolis, was commissioned to draw up the plans, and the building was complete and ready for occupancy in 1890.

The death records of the eighties show the usual causes of death: diphtheria took the largest toll of life; consumption, smallpox, "perished in the storm," "cyclone," pulmonary Phtisis" "Inflammation of the lungs," "bleeding of the lungs," "lung fever" "tiphus fever," "dropsy of the heart," "could not learn," "cholera morbus," "cholera infantum," and "inflammation of the bowels." And one death from leprosy.

Discovery of leprosy cases in the county was reported in the *Granite Falls Tribune* of August 15, 1884, as follows:

> "Two weeks ago we stated that there were several cases of leprosy in Yellow Medicine County. Thursday last Dr. Stoddard of Beaver Falls brought to Granite Falls a man who lives a half mile south of Sacred Heart, who has had the disease for four years, and a consultation of physicians was held to determine whether or not it was a case of leprosy. Dr. LaRue of Appleton, and Dr. Rogers of Montevideo being present. The physicians were satisfied that it was a case of leprosy. Photographs of the man were taken, and one, with a history of the case, was sent to Professor Phiffard of New York, a specialist. While here Dr. Stoddard visited a man living in the town of Sannes who has had the disease so long that his fingers have fallen off and he is reduced to a mere skeleton. There is another in Stony Run, making three in all within a radius of ten miles of Granite."

The "man in Sannes" died the day after the consultation at the age of forty-two years. He had come to Minnesota from Norway June 10, 1870.

During the eighties the amount required for poor relief increased greatly, due to the hard times. The county had acquired a poor house but many families were given aid to maintain them in their own homes, and some individuals were boarded out on contract for from $1.88 to $5.00 per week, depending upon the circumstances. In 1884, the total amount spent for the poor was about one-third of the amount spent for all purposes. In 1887, the Board decided that to "promote the health, happiness, and prosperity of the people of the county it would grant no liquor licenses during the year; it also acquired a tract of land for a poor farm, erected buildings upon it, stocked it with machinery, animals, and furniture. Thereafter the commissioners ruled that any person requiring more than $50 aid from the county in any year should be taken to the poor farm, and further specified that no dealer in liquor should sell liquor to any person receiving public aid.

The County Board sometimes extended aid to persons who as immigrants were not entitled to receive assistance, or when through hardship or misadventure common decency demanded such aid. But they were meticulous in requiring other counties to bear the burden for the poor and sick who had come from them to Yellow Medicine County. There is even an instance where the County Board billed Chippewa County for one-half of the cost of burying a stranger who drowned on "the Chippewa side of the Minnesota River." Families were sometimes removed to their former homes by the sheriff, and the Board's policy toward Indians was, no aid whatsoever.

The Indians were driven out of the county after the uprising, but Yellow Medicine was their ancient home, and in time numbers of them came drifting back to live in scattered groups along the Minnesota or Yellow Medicine rivers. By 1888 a community was formed which continues as the Pehijutazi Village now scattered along the Minnesota river three miles south of Granite Falls.

The Indians were desperately poor and many were sick, victims of the dread and incurable tuberculosis. Although some of them owned lands in South Dakota the income from them was small. Annuity payments, when forthcoming, were quickly spent, for the Indians were by nature improvident. No hospitalization for Indians was provided, nor was the contagious nature of tuberculosis fully recognized. The sick lived in the poor and unhealthful surroundings with the well, and it was not unusual for an entire family of children to be wiped out by the disease. Sometimes in a family of eight or nine only one child would survive, and it seemed that the tribe would soon die out.

The County Commissioners recognized the Indians as a potential drain upon county resources, and in 1889 instructed the county attorney to find out "who owned the Minnesota River woods" where they were camping. But if any effort was made to dislodge them it was unsuccessful. The board's policy of no assistance was strictly enforced, with the single exception, of appropriating $12.00 to buy a coffin. In January, 1891, when the Indians petitioned for aid the county attorney was directed to remind Washington that it was the business of the federal government to look after them.

In 1891, Dr. George W. Nichols, formerly of Rochester, Minn., settled with his family at Wood Lake. He also opened an office in Granite Falls. Dr. Nichols was fond of spirited horses and a smart turnout. *The Granite Falls Tribune* comments: "Dr. Nichols invited us to visit a patient with him, and we can vouch for the rapid transit to and from." He practiced in Wood Lake until 1895.

In the same year Dr. Albert W. Cummings, formerly of Sauk Center, located in Granite Falls. His office was in a small, one story building on Prentice Street which is now used as a shoe repair shop. He was of the homeopathic school and had a good practice.

In Canby Dr. Chambers was about to go into the drug business, although he was not a pharmacist; and his friend and chess partner, Adolph Gilberson, sold out his drug business to Dr. James McPeek of Gary, South Dakota, and his partner O. M. Eichinger.

Dr. James McPeek came to Canby in the spring of 1885 and at once opened offices "over Gilberson's old stand." He was not a pharmacist, but continued in the drug business as long as he lived in Canby. The doctor and his family moved into the house of Mrs. O. N. Lund, where a new barn was built for the accommodation of the doctor's fine team which had "carried off the laurel in a race with one Thompson at the Gary Fair."

Late in the year Dr. Chambers sold his drug business, announcing that he would accept "a lucrative position in New York with the Bellview Hospital." His departure left Dr. McPeek the only doctor in Canby, but this was soon remedied by the arrival of Dr. Charles A. Atherton. "He is from the city hospital and we understand he is a man of experience in the medical profession. His office and headquarters will be in the drug store of Dorr and Jenson." Dr. Atherton was immediately in demand socially, took part in programs of the Literary Society, was appointed county physician for the west ten townships; but after about six months he left Canby to practice in Toronto, South Dakota.

Dr. E. A. McPeek "from the eastern part of the state" spent a few months in Canby in 1892, assisting his brother during his absences in the long illness of Mrs. McPeek, who died in January, 1892. He also planned to locate permanently in the county but this plan was not carried out.

Several of the larger towns in the county were by this time looking forward to improvements such as the installation of electric light and sewer systems. The city of Granite Falls let the contract for this work in the winter of 1892 and work began the following spring. In Canby there had been agitation for the erection of a water tower and pumps to supply water for fire protection, but the $5,000 bond issue presented to the voters for approval was defeated by a vote of sixty-six to thirty-two. The irate editor of the *Canby News* attributed this defeat to the Council's purchase of four dozen pails. "Ye gods," he cried, "how we have tumbled!"

The City of Canby was located on the prairie nine miles from the Dakota line, and every year its citizens were reminded of the fire hazard when prairie fires flared in the distance. Each fall the city would be "burnt around" as a fire protection measure. But the fire which threatened its existence on September 5, 1893, originated in a store, and driven by rising winds the flames raged through the business district. It spared the new city hall and bank building but destroyed almost two blocks of frame business buildings, including the McPeek and Eichinger Drug store. Total loss was estimated at $150,000.

Yellow Medicine County felt repercussions of the panic of 1893. The local board of Granite Falls (quoted in the *Tribune*) chided President Cleveland for going snipe shooting "while we by charity are fed." That indefatigable traveller, Dr. Florado H. Wellcome, returned from one of his extensive trips through the west and reported widespread unemployment.

Farm prices continued low, but taxes and land values were steadily rising. The farmer, caught between two extremes, found it hard to make more than a bare living. Such protective tariff measures as had been advocated were designed to protect industry only. Pioneer settlers were leaving the farms for the small towns where, with a garden patch, a cow and a flock of chickens they could live at least as well and much more comfortably than on the farm. The younger generation were not so wedded to the land; they were not so sure they wanted to put in a lifetime of hard work for small returns, and they drifted in ever increasing numbers to the industrial areas which offered them a higher standard of living and better educational advantages. For the first time in history the population of the state was almost equally divided between the farm and urban areas. Alarmed at the drift toward the cities the state government for the first time looked into conditions of farm life, and offered aid to rural school systems as an inducement to keep young people on the farms.

Still, the spirit of the time was optimistic and buoyant, for people lived well on a little money, and it was a period of expansion and boundless hope for the future.

New doctors were attracted to the county. In the spring of 1894 Dr. Tord Nielson, a graduate of the Royal University of Norway, located in Canby. He had been licensed in Minnesota in 1883, in North Dakota in 1885, and practiced in Minneapolis prior to his arrival in Canby. This move proved not a happy one for Dr. Nielson and he left Canby after about two years.

In the next year a number of new arrivals are noted. Dr. J. Woodbury Donnell settled in Clarkfield, where Dr. Albert Torgersen was practicing and also conducting a drug business. Dr. Martin A. Nelson also settled in Clarkfield; he had just graduated from the Physio-Medical College of Indiana, and this was his first field of endeavor.

In the fall of 1895, the little village of Echo had positive proof of the benefits sometimes conferred by an ill wind. A blizzard brought that community its first resident doctor.

Dr. Thomas J. Gill was on his way to Appleton, Minnesota, when the storm blocked all rail traffic. Passengers of the Minneapolis and St. Louis were stranded in Echo, and Dr. Gill took a room at the Nicollet House. The community was in the midst of a diphtheria epidemic, with no doctor nearer than Granite Falls or Redwood Falls. Word that there was a doctor at the hotel flew through the town, and in a matter of hours a man was at his door to beg his services for two sick children. The doctor found the little girls ill with diphtheria. For Dr. Gill there could be no question of leaving the community while the need was so great, so he stayed on. By the time the epidemic was under control he had made up his mind to stay and practice in Echo.

Dr. M. N. Triplett located in Hanley Falls in 1895, for that little village had had no doctor since Dr. Sweet had left in 1891. Dr. Triplett had just graduated from the University of Louisville. After two years at Hanley Falls he removed to Dawson, but continued his professional card in the local papers and occasionally returned to care for his patients in the county.

In 1896, Dr. James A. Watson began his medical practice in Wood Lake, succeeding Dr. Nichols. He was a Canadian, born in Ireland, a graduate of the University of Manitoba, and he was one of three brothers to launch careers in Yellow Medicine County. Frederick G. Watson, a brother who was a druggist at Wood Lake and later became a doctor who located in Clarkfield, had preceded him. Another brother, Charles, took his medical training at Hamline University and began practice in Boyd, Minnesota, a small village not far from Clarkfield, from which point he frequently came to Yellow Medicine County to help his brothers or take over their practices during their absence.

Dr. James McPeek had been for a time the only doctor in Canby when Dr. William D. Calvin and his wife, who was also a doctor, settled in Canby. Dr. Calvin soon proved himself a skilled physician and was very well liked, but Mrs. Calvin was unhappy over the lack of opportunity for herself. It was principally for this reason that the Calvins left after about a year in Canby. Dr. McPeek left Canby for St. Charles in 1896.

Then Dr. William A. Angell opened offices in a building which housed an implement store. His wife was a nurse, and a very beautiful woman, and within a short time the Angells were well established. Dr. Angell was appointed County Physician for the ten west townships of the county, and served in this capacity for a number of years. His practice and his popularity grew year by year; he travelled as far west as Brookings, and all through the surrounding counties. He kept two teams and two drivers, and it was his habit to take what rest he could in sleeping while they drove.

Another doctor coming about the same time was Dr. Thomas McKey, who had spent ten years in practice at Clear Lake, South Dakota. He was to remain in Canby until after 1900.

Dr. Nicolay H. Schjelderup (later spelled Schelderup, Sheldrup) began his medical practice in June, 1897, directly after his graduation from Rush Medical College. Born and educated in Norway, he appended the words "Skandinavisk Laege" to his professional card which appeared in most of the county newspapers. The county was by that time so thoroughly a Norwegian community that English was almost a secondary language in parts of it. Church services in Norwegian were continued until comparatively recent times.

Dr. F. G. Sparling began to practice in Wood Lake about the same time. Since he and Dr. Scheldrup worked together and helped each other the impression was that they had long been friends. Dr. Sparling is remembered as a young man who helped the residents of Wood Lake through an epidemic of measles, but since that community has no newspapers of that period, and did not contribute items to any county newspaper, there are no records of him that are at all informative.

In the May 10 issue of the *Clarkfield Advocate,* 1897, Dr. Triplett's professional card gives his address as Dawson, and there is mention of a new doctor, John O. Dyrnes, at Hanley Falls.

Dr. John O. Dyrnes came to Hanley Falls without any intention of remaining there, for he was waiting for an appointment as medical missionary in some foreign field. He had been born in Norway in a poor family, and under most adverse circumstances won for himself an elementary education in the United States after he had attained manhood, then took his medical and theological training at the same time, while also supporting himself by working at various menial occupations. After about two years of practice at Hanley Falls and other places he received his appointment, went to Paris to study French and take additional medical training, then to Madagascar where he devoted the rest of his life to his work as a medical missionary.

The next doctor to locate in Hanley Falls was Dr. Walter M. Beck, who according to the *Clarkfield Advocate* of March, 1898, "has moved into the Wilson Building and is prepared to receive calls at any time." As a further introduction a later issue states: "We understand the doctor has had an extensive practice of twelve years, has diplomas from two leading eastern medical colleges and two hospitals, and for five years conducted a hospital of his own in Wisconsin, and we may judge that he is a physician of exceptional qualifications." But Dr. Beck barely had time to get settled in the county, for when the Spanish-American War began he immediately answered the call for volunteers. According to the *Clarkfield Advocate* the doctor went in as a private. He was assigned to the Thirteenth Minnesota Regiment, one of three raised in the state for service in that war and the only regiment actually to see active service. The Thirteenth left San Francisco on the ship *City of Para,* was transported first to Honolulu, where the troops were royally welcomed, and then to the Philippines. An interesting commentary upon the food of soldiers in that war was furnished by Private Bohannen of Clarkfield and reported in the *Advocate:*

> "We are fed worse than cattle, and our fare consists chiefly of hard tack, poor coffee, and "sow bellie" and a flavor of potatoes but on some occasions we get even worse than that. One night our supper consisted of a half a cup of soup (so-called) and a handful of hard tack. The officers do not appear to care as they get a good living themselves."

As a private Dr. Beck distinguished himself by his sharp-shooting, for he was an expert marksman and proud of his skill; and as a doctor, when he headed a military hospital on the island. On completing his military service he did not immediately return to Hanley Falls, but eventually he resumed his practice there and made a reputation for himself as a doctor and as one of the most colorful figures in the history of Hanley Falls.

During Dr. Beck's absence Dr. Alonzo T. Munro had settled in Hanley Falls, but in 1899, he removed to the larger village of Wood Lake. He became a candidate for coroner but was defeated by the incumbent, Dr. F. J. Cressy of Granite Falls.

In June, 1898, a new doctor was announced by the *Clarkfield Advocate.*

> "Dr. E. H. Kerkhoff came up from Minneapolis last Friday and is now permanently located in Clarkfield. The doctor comes very well recommended, is a very pleasant gentleman to meet, and we predict success for him in our midst. He can be found at the drug store or Commercial House for the present. For the benefit of those who do not speak English we will state that the doctor can converse in both Skandinavian and German."

The doctors then practicing in Clarkfield were Dr. Albert R. Torgersen and J. Woodbury Donnell.

Barely two weeks after his arrival Dr. Kerkhoff was asked to make a professional call upon Dr. J. Woodbury Donnell, who had been drinking rather heavily, in his quarters above the Lewis Drug Store. Dr. Kerkhoff found Dr. Donnell in convulsions and bleeding profusely from self-inflicted wounds in the throat. The doctor tried to close the wounds and stanch the bleeding, but Dr. Donnell did not want help; he apologized for not having done a better job. He had taken strychnine before cutting his throat, and died in great agony within a short time. He was a single man, forty-seven years of age.

In November Dr. Kerkhoff returned to Minneapolis for further hospital training in the city hospital, leaving "many fast friends all of whom will greatly miss him." The vacancy thus left was promptly filled by a new arrival.

> "Dr. William B. Torgerson, formerly of Cannon Falls, this state, has located at Clarkfield and has fitted up offices over the Clarkfield State Bank where he can be found day and night. The doctor is a graduate of the University of Minnesota and comes highly recommended."

Dr. John S. Kilbride settled in Canby in 1900, after some years of practice in the county, from his former headquarters in Dawson, Minnesota. He expected to make Canby his permanent home, and did in fact live there for many years, except for an interval of three years when he practiced at Watertown, South Dakota. He practiced as a general practitioner but was a specialist in diseases of the eye, ear, nose and throat. He attended clinics both at home and abroad, and was at one time President of the Camp Release Medical Society.

(To be continued in the September issue)

President's Letter

ROUND-UP SEASON

For much of Minnesota's population, summertime means a time of vacations, traveling, leisurely evenings and weekends and thorough enjoyment of the state's many marvelous resources.

But for children of a certain age group it means a time of looking forward, with either dread or extreme interest, to the fall, when they will be entering school for the first time.

The prospect of entering into the regular daily routine of school is a very serious business in most homes. And rightly so, too. Preparing a child for this important milestone is a vital part of his training and education.

Parents and teachers in Minnesota are aware that the health of the school-age youngster is of primary concern when he enters school. For many years now, the Minnesota Congress of Parents and Teachers, in active co-operation with the Minnesota Tuberculosis and Health Association, has developed a program of pre-school examinations for children. Called the Summer Round-Up Program, this project has done great good in bringing children in, either in groups or individually, for a thorough physical examination before entering school.

The program calls for active support and co-operation from the state's physicians. Without their willing help, fewer children would be examined, and consequently, many of them would continue in school with some minor defect or illness which could have been checked had a pre-school examination been given.

During the summer of 1952, about 22,000 children were examined in a group or individually as part of the Summer Round-Up Program of the PTA. This is out of a total of about 28,000 children entering classes in the fall of 1952.

It is interesting to note the extent to which physicians of Minnesota co-operated in this effort. Of that 22,000, nearly 19,000 children were examined in the office of their family doctor, the remaining portion being examined in a group.

As part of the routine physical examination, children needing vaccination and immunization are given this protection. Also, many of the children are given routine dental and eye examinations. Corrections are recommended, not only by the child's dentist and eye doctor, but by the family physician as well, and most corrections are made quickly to avoid any possible future complications.

The importance of excellent health for a child starting school cannot be overemphasized. Considering the many problems confronting a new young student, it is imperative that he not be handicapped from getting a good start, by some small health matter which could have been found and corrected in a pre-school check-up.

I would urge physicians to play their part willingly in this statewide program of the PTA. Not only can doctors co-operate fully when called upon to do so, but they can take the initiative in their own community, working with and through parents and teachers to help bring better health to children beginning their education.

Conrad J. Campbell

President, Minnesota State Medical Association

Editorial

CARL B. DRAKE, M.D., *Editor;* GEORGE EARL, M.D., HENRY L. ULRICH, M.D., *Associate Editors*

NEW EDITOR AND BUSINESS MANAGER

WITH THE September issue of MINNESOTA MEDICINE, the present editor will turn over his responsibilities to the new editor, Dr. Arthur H. Wells of Duluth. Dr. Wells is a graduate of Harvard Medical School, class of 1930, and spent some five years at the Research Hospital in Kansas City before moving to Duluth in 1936. He is at present pathologist at St. Luke's Hospital in that city. He has been chairman of the Cancer Committee of the Minnesota State Medical Association since 1945 and was elected president of the Minnesota Division of the American Cancer Society in 1948 to succeed Dr. W. A. O'Brien. He has been a member of the Editing and Publishing Committee of MINNESOTA MEDICINE for several years. Dr. Wells is relinquishing his responsibilities with the Cancer Society in order to have more time for his new editorial duties.

Simultaneously with the change in editors, the office of business manager of the journal will be relinquished by Mr. J. R. Bruce, past president and present chairman of the Board of Directors of the Bruce Publishing Company of Saint Paul, who has been publishing the journal since its first appearance in January, 1918. Thus Mr. Bruce has been business manager of the journal nearly thirty-six years, a longer tenure than that of the retiring editor who assumed his duties officially on April 1, 1919. MINNESOTA MEDICINE was the first medical publication of the many medical and other journals and books to come off the presses of the Bruce Publishing Company. The high quality of all the Bruce Publishing Company publications is due to Mr. Bruce and his fine organization.

The title of business manager will be assumed by Mr. R. R. Rosell, executive secretary of the Minnesota State Medical Association, who has proven himself a most efficient executive during his long tenure of office as secretary of the State Medical Association. Communications to the business manager of MINNESOTA MEDICINE may continue to be mailed in care of MINNESOTA MEDICINE, 2642 University Avenue, Saint Paul 14, Minnesota. Likewise, letters to the new editor of the journal may continue to be sent to MINNESOTA MEDICINE at the same address.

C. B. DRAKE

MEDICAL LICENSURE STATISTICS FOR 1952

STATISTICS regarding the number of physicians dwelling and practicing in Minnesota and the United States possess a certain interest. According to the fifty-first annual medical licensure report of the Council on Medical Education and Hospitals of the AMA,* there were 214,667 physicians licensed in the United States at the close of the year 1952. Of these, 151,363 were in private practice, 6,677 were in full-time research and teaching, 28,366 were interns, residents and physicians engaged in hospital admintration, 8,166 were retired or not in practice, and 20,095 were in government services.

During the year 1952, 6,885 new licenses were issued and 3,829 physicians died, making a net gain of 3,056. In 1951, the net gain was 2,207.

The figures for Connecticut and Maryland include physicians licensed by the homeopathic medical examining boards of these two states. Those boards in Arkansas and Louisiana had no new licentiates in 1952.

In Minnesota, 351 new licenses were issued, 220 by examination and 131 by reciprocity endorsement. This compares with 1,581 issued in California, 1,292 in New York and more than 500 in Florida, Illinois, Ohio, Pennsylvania and Texas. Of the 132 graduates of the University of Minnesota Medical School, none failed to pass a state board or a national board examination.

Of the freshmen students who entered medical school for the 1951-1952 session, 5,249 (73.1

---

*Medical Licensure Statistics for 1952, Donald G. Anderson, M.D., Secretary, and Anne Tipner. J.A.M.A., 152:415 (May 30) 1953.

per cent) had baccalaureate degrees; 408 (5.7 per cent) had attended college four years but did not receive a degree; 1,437 (20.3 per cent) had had three years of college work and only 63 (0.9 per cent) had had only two years of college.

Minnesota is included among the nineteen other states, the District of Columbia and Alaska which require a Basic Science certificate before a candidate may take the state board examination. Certificates were granted to 5,730 candidates in 1952. Some 26.1 per cent of those who took the examination failed. Of the physicians, medical students and dentists examined, 12 per cent failed. Only 15.5 per cent of the osteopaths who took the Basic Science examination failed, whereas 65.1 per cent of the chiropractors and 55.2 per cent of the unclassified failed.

The certificate of the National Board is recognized by all medical licensing boards for registration by endorsement with the exception of Arkansas, Florida, Indiana, Nebraska and Texas.

The practice of medicine in any state is under the jurisdiction of the state board of medical examiners. These have been bending their efforts towards assisting foreign-trained physicians to locate in the United States. Forty-five boards now permit foreigners to take examinations, but under varying conditions. The Council of the Association of American Medical Colleges has prepared a list of fifty foreign medical schools whose graduates they recommend for consideration by the medical boards on the same basis as graduates of approved medical schools of this country. This list has proven of great value to the state licensing boards. Of the total number (1,208) of graduates of foreign medical schools 648 (53.7 per cent) passed the examination. The state boards are to be congratulated on the way they have been handling a difficult problem.

CANCER WARNINGS NOT OVERDONE

THE OTHER DAY a patient, whom I had seen off and on for a variety of complaints, consulted me about a lesion he had had behind the lobe of his ear for about two years. It was located where the tip of the ear-piece of his spectacles had been irritating him.

One glance at the rather extensive area of granulation-like tissue aroused my suspicions that here was skin cancer which had been allowed to progress for at least a couple of years.

The patient was a contractor and above average in intelligence and must have been exposed to the barrage of publicity which has been fired at the public in recent years about the signs and symptoms that should make one suspicious of cancer. A sore spot on the skin which fails to heal is on the list. How could one neglect an area like this man had for two years and allow it to reach a stage impossible to remove without producing extensive scarring and difficult to treat with x-ray—for it proved to be a squamous cell cancer.

Imagine my consternation when my patient told me he had consulted an aurist a year or so ago and had been assured the lesion was nothing that deserved any attention. That cast a different light on the picture. The aurist and not the patient was, therefore, the one most to blame for the neglect of this serious lesion. It seems unbelievable that any physician in this day and generation could fail to be suspicious of a skin lesion of this sort which had failed to heal after a matter of weeks. There is some excuse for failing to detect certain hidden cancers, but not skin cancers.

One can conclude, however, that the publicity campaign which is being conducted by the American Cancer Society and its subsidiaries and the life insurance companies and other agencies to draw attention to the signs of beginning cancer is not overdone, but that warnings to the public and also to the medical profession must continue to be offered again and again, if cancer is to be recognized in its early stages when it can be effectively treated.

In all the attention now being paid to chemotherapy, it should not be forgotten that bed rest is just as necessary as ever in the treatment of tuberculosis. All forms of collapse therapy are still useful in suitable cases. Whereas chemotherapy has not shortened the duration of hospital stay, it has helped the recovery of many patients who would otherwise have succumbed. The lives of many additional patients have been prolonged indefinitely, although the disease was not arrested.—WILLIAM S. SCHWARTZ, M.D., *The New England Journal of Medicine*, April 23, 1953.

* * *

BCG is harmless if prepared and used properly; it produces a certain degree of immunity, and it should be used to immunize the more vulnerable groups in the population. These groups are doctors, medical students and nurses; hospital and laboratory personnel; individuals unavoidably exposed to infection in the home; patients and employes in custodial institutions, and children and certain adults considered to have inferior resistance and living in communities where tuberculosis is unusually prevalent.—JAMES E. PERKINS, M.D., *Bulletin of the National Tuberculosis Association,* April, 1953.

UNIVERSITY HOSPITALS ADMISSION POLICY

The University Hospitals serve two distinct but inseparable functions, the provision of facilities for the instruction of medical students, interns, and fellows, the provision of medical care to a segment of the population of the state. Since many physicians, especially those who are graduates of medical schools other than the University of Minnesota Medical School, may not be entirely clear as to which patients are eligible for care at the University Hospitals, a brief discussion of our admission policies should be of interest and possibly of some help.

Patients referred to the University Hospitals or its Out-Patient Department are classified as follows:

1. *County.*—These are patients unable to pay for any portion of their medical care. Their expenses are shared equally by the county and the state. They must present county papers filled in by both their physician and their county commissioner (or his representative, i.e., the executive secretary of the welfare board).
2. *Per Diem.*—These are patients who cannot afford to pay for the services of both a private physician and a private hospital. When applying for either out-patient or hospital care, they must present a special form filled in by themselves and their family physicians. They are required to pay their clinic or hospital expenses only, no charge being made for the professional services of the staff. From the standpoint of money received by the hospitals, there is no difference between a county patient and a per diem patient.
3. *Private Patients.*—These patients, limited in number, are admitted as a convenience to the staff and as a service to physicians of the state. Each private patient is referred by letter from his physician to a specific member of the University Hospitals staff.

Our objective is to furnish the best possible medical care to all patients. Treatment, services, and privileges accorded to patients are identical whether they are admitted as county, per diem, or private patients. It should be emphasized that private patients of the members of our staff are seen by students, interns, and fellows and are considered to be "teaching cases" to the same extent that county and per diem cases are so considered.

In referring patients, you will be of great assistance to the patient and to the hospitals if you will consider his ability to take care of the expenses. Each new patient is interviewed with regard to his financial status and is placed accordingly into one of the above categories. Per diem and private patients should be prepared to make a substantial deposit on admission to the hospital. They are sent statements weekly and are expected to pay their bills in full on discharge.

The facilities of the hospital emergency room, W-212, are available on a twenty-four-hour basis for taking care of acutely ill patients. When such a patient is being sent in, an advance telephone call to the admitting physician in charge of the emergency room will often make it possible to handle the patient's problem most expeditiously.

Out-of-state patients should have a signed authorization from agencies if they are unable to manage the expense themselves. Definite arrangements should be made in advance for these patients since out-of-state cases are taken on the general services only if there are no Minnesota residents awaiting admission. However, at the present time there is no waiting list for admission to the hospital. Any patient who is eligible for care at the University Hospitals and who requires hospitalization can be promised early if not immediate admission.

Indigent patients living in Minneapolis and Saint Paul, as a rule, are eligible for care at Minneapolis General Hospital or Ancker Hospital. If there are special circumstances which make you wish to send a patient to the University Hospitals, certification should be sought in advance. Should you have any question concerning a patient's eligibility for admission or any aspect of his medical care, please feel free to communicate with the hospital administration or an individual member of the staff.

Harold S. Diehl
Dean, Medical School, University of Minnesota

Medical Economics

Edited by the Committee on Medical Economics
of the
Minnesota State Medical Association
George Earl, M.D., Chairman

INCREASE NOTED IN MEDICAL EDUCATION FUND

New impetus to individual giving toward alleviation of financial stress of the nation's medical schools is seen in a recent report on contributions to medical education.

More than one million dollars has been donated to medical education by physicians in the United States since January 1, 1953. This increase is shown in reports released by the American Medical Education Foundation, indicating that approximately 11,000 physicians have contributed $800,000 to the Foundation since the first of the year. Also, records from thirty-three of the country's seventy-nine accredited medical schools indicate that 8,217 doctors have contributed $301,426.42 directly to their alumni organizations.

Although this number of physicians may seem a large amount, percentage-wise, the record is not so impressive. This group of contributors represents only 9.9 per cent of the nation's doctors. But it must be remembered that this 9.9 per cent have given over one million dollars to medical education.

If such a small percentage of the nation's physicians can give so generously, how much more would the fund swell if the percentage were to rise to 100!

STATE MEDICINE HAS ECONOMIC APPEAL

A slightly different slant on the reasons why socialized medicine appeals to some people, is seen in a recent editorial in the *Long Prairie Leader*. The emphatic point made by the paper is that economic aspects, as contrasted to political and social ones, are the basic considerations when it comes to deciding what type of medical care system America should have. The paper says: "People living in towns like Long Prairie where good hospital service is available at reasonable cost, do not realize what city folks are up against when family illness comes and hospitalization is necessary. It is a common expression among city folks that 'one serious illness with surgery and hospitalization means ruin for the head of the family.' "

Specialist and G. P.

Another point stressed is the rise of the specialist and the disappearance of the old-time general practitioner in the city. The editorial states:

> "In cities now it is almost impossible to have a doctor come to the house. This is one of the by-products of the specialist system. . . . Much of this is of course necessary and undoubtedly saves lives but the public is becoming increasingly suspicious that much of it is unnecessary and is actually an excuse for doubling the fee."

Reiterating the problem of costs for city folks in obtaining medical care, the editorial affirms that "hospital charges, specialist's fees, nurses, operating room expenses, drugs and other service costs have climbed alarmingly in recent years." All this helps get supporters for government interference in financing medical care. "It is true that wonderful advances have been made in the successful treatment of surgical and medical cases," the editorial goes on, "but the evidence multiplies that when the bill comes in, it usually makes a new supporter for the demand that the government get into the hospital and medical business."

An Urban Problem

The editorial concludes that the problem is very much a city one, "as the rural citizen still has access to the general practitioner who comes on call, knows a little about everything and does not have to have a hospital staff to assist him with a case of bellyache. The movement for socialized medicine has its impetus in the cities, not the country."

AMA REAPPROVES MEDICAL EXPENSE DEDUCTIONS

The medical profession, together with insurance companies, underwriters and the noncommercial health insurance plans, has long realized the seriousness of the cost of the so-called "catastrophic illness." Changes in present insurance coverage are being worked out to help alleviate much of the financial hardship imposed by this type of illness.

Also, the medical profession is supporting related measures which will help ease this often heavy burden.

Official approval of the American Medical Association has been given once again to deduction of medical and dental expenses for income tax purposes.

Appearing before the House Ways and Means Committee, which is considering this measure, Dr. David B. Allman, member of the AMA Board of Trustees, reaffirmed the AMA's position of approval of such legislation. He said: "The principle involved in all of these measures (previous similar legislation) has been actively approved by the Committee on Legislation and by the Board of Trustees of the American Medical Association. Although no attempt has been made to work out the details of the formula to be applied, we are of the opinion that a greater measure of relief should be provided in this way for those individuals who have suffered from the financial burden resulting from the expense of a serious, long-term illness."

Notes Misconceptions

Dr. Allman pointed out that taken as a whole, medical costs are not out of line with other normal living expenses. He stated:

> "Statistics presented by the United States Department of Labor for the third quarter of 1952 reveal that living costs have increased 90.8 per cent since 1935-39, while medical costs have increased only 65.5 per cent in the same period.
>
> "In addition, it should be noted that recent surveys indicate that only 3 per cent of American families have medical bills over $200 and that 80 per cent have no medical debts of any kind. Despite this fact, it is realized that a serious long-term illness can be a financial catastrophe to almost any family."

Dr. Allman's testimony before the committee also emphasized that for some time several insurance companies have been experimenting in a relatively new form of insurance called, among other titles, "medical disaster" or "catastrophic" coverage. "A few of the agencies established by medical associations are also underwriting this newer version of protection," he added. "Its purpose is to provide sound protection in those instances requiring long-term or high-cost treatment. These ventures are being undertaken with the knowledge and full support of the medical profession."

After recounting the unparalleled growth of voluntary health insurance in America, and averring that both insurance agencies and physicians are attempting to improve that phenomenal growth in coverage, Dr. Allman concluded:

> "We believe that the enactment of legislation of this type will further encourage the improvement of existing plans, will extend coverage and help to eliminate or reduce the financial burdens which do exist as a result of illness. It will also encourage people to look after their own health rather than turn to the government for assistance. We are seriously convinced that our present non-governmental system of medicine not only provides the best care but that it is also the most economical. We are therefore in accord with any legislation designed to help preserve that system."

SOCIAL SECURITY SYSTEM HIT BY SENATOR BRICKER

Senator John Bricker of Ohio recently defined the proper role of the federal government in the social security field. Speaking at an insurance luncheon at the annual meeting of the Chamber of Commerce of the United States, Senator Bricker said, "The Federal Government has a definite part to play in meeting social problems, but this role should be clearly defined, kept within its proper limitations and safeguarded against those who would assign the Federal Government to a much larger role in this field."

Defining the fields wherein the federal government can properly work, Senator Bricker noted that social security "is an appropriate field for" and the primary responsibility of the federal government, but, he emphasized that unemployment compensation "should be made even more completely the responsibility of the several states," that elementary education should be left under the control of local governments, and that government should be kept out of the field of medical care.

Study Shows Promise

Senator Bricker further stated that the current study of the present system by a House Ways and Means subcommittee "will lead to a much improved system of social security." But he declared that "recognizing the government's role in this field does not imply blanket endorsement of the present Old-Age and Survivor's Insurance Program. Our present social security system is riddled with windfalls, arbitrary exclusions from coverage, inequities and financial madness."

HEALTH INSURANCE BOOK AVAILABLE FROM AMA

The American Medical Association's Council on Medical Service and the Committee on Prepayment Medical and Hospital Service have recently issued a late account of health insurance plans in America. The booklet is the seventh annual revision of the health insurance brochure which is called "Voluntary Prepayment Medical Benefit Plans."

The brochure carries a great deal of information about such insurance plans in the nation. Each plan is described by summary of benefits, enrollment at the end of 1952, and other information. There is a separate section listing plans by type of sponsorship, and also identified are those plans having been granted the Council's seal of acceptance. In addition, other types of programs are described to give examples of voluntary methods of insuring some of the costs incident to health care. Single copies are available without charge from the Council on Medical Service of the AMA.

INTERNATIONAL CERTIFICATES OF VACCINATION

A revised immunization form required for international travel is now available, according to the U. S. Public Health Service, Department of Health, Education, and Welfare. However, the old certificate will be acceptable in international travel until the expiration date of recorded vaccinations.

The new form, entitled International Certificates of Vaccination, provides travelers with a record of compliance with vaccination requirements acceptable to all nations governed by the International Sanitary Regulations now in effect. It is written in both English and French, but entries may be made in any language. The form contains vaccination certificates for smallpox, yellow fever and cholera, and space to record other immunizations.

After July 14, 1953, copies of the "Certificates" will be distributed with all passport applications issued by clerks of the court in any city and by the passport agencies of the State Department in Boston, New York City, San Francisco, New Orleans, Chicago, and Washington, D. C. The form may also be obtained from local or State health departments, or from facilities of the Public Health Service. The Superintendent of Documents, Government Printing Office, Washington, D. C., has the form on sale for 5c a copy or $2.50 a hundred. Persons traveling to countries where passports are not needed, but where immunization is required, may obtain the form from these same sources. Travel agencies, steamship lines, airlines, and other transportation companies will be given permission to reprint the form upon request to the Division of Foreign Quarantine, Public Health Service, Washington, D. C.

In accordance with the revised International Sanitary Regulations, the new "Certificates" require that the results of only the primary vaccination for smallpox be recorded. In the case of revaccination, the smallpox certificate becomes valid immediately, whereas previously a fourteen-day wait was required.

The cholera certificate becomes valid six days after the first injection. Previously, the entire series had to be completed before the certificate became valid. Travelers are cautioned that the type of vaccine used in this country provides maximum protection only after the second injection. Therefore, it is advisable to take the second inoculation.

The Public Health Service urges travelers to be sure that their smallpox and cholera certificates are properly stamped by the certifying health officer with an official stamp. The signature of the health officer, alone, does NOT make the certificate valid. If the local health officer is not equipped with an identifying stamp, undoubtedly the State Health Officer will be able to validate the certificate. Officers of the Public Health Service and Medical Officers in the Department of Defense may certify these certificates also.

As provided by the regulations, the new certificate for yellow fever vaccination is valid for six years instead of four years. As before, yellow fever vaccination certificates are valid only when the inoculation is obtained from a yellow fever vaccination center designated by the U. S. Public Health Service. The international regulations require a nation to designate specific vaccination centers for this purpose.

Agencies having a supply of the old form may continue to distribute it until their stock is exhausted. However, when the old certificate is used, it is necessary to follow the requirements of that form for smallpox vaccination. In the case of yellow fever and cholera vaccinations, the new regulations may be applied.

Under the International Sanitary Regulations, the Department of Defense will issue its own certificate to military personnel on active duty; however, military dependents must continue to use the international vaccination certificate.

AMERICAN MEDICAL ASSOCIATION

House of Delegates—Résumé of Proceedings

New York City—June 1-5, 1953

The aspirations and ideals of American medicine, its hopes and fears and its enormous accomplishments passed in review once more as delegates to the American Medical Association thrashed out their problems in their 102nd annual session, June 1 to 5, in New York City.

Implicit in all of the resolutions introduced, in the lively deliberations of committees, and in discussions on the floor of the House, was the staunch attachment of the American doctor to freedom for himself and for the institutions of education, research and patient care which he has built. Also, his reasoned fear of anything approaching government controls which might threaten the high standards of education and practice built up in the climate of freedom over the years.

Among the issues presented for discussion and final determination, the expansion of government medical care for veterans loomed large; also the problems involved in financing medical education, and the relationship of the whole government social security program to the private practice of medicine, now and in the future. The sharp necessity for defining relationships between physicians and the governing boards of hospitals where they practice was considered at length.

There were other acute day-to-day problems to be explored such as the nursing shortage, the allocation of interns and residents with an eye, on the one hand, to their further education and, on the other, to the needs and rights of the smaller non-teaching hospitals.

Ethics Discussed

There were ethical and disciplinary problems to be thrashed out, especially in relation to public criticism leveled at doctors by the governing board and the director of the American College of Surgeons. There was the need for re-evaluating and adjusting old relationships between medicine and its auxiliary professions and between medicine and dentistry. There was also a demand of surprising vigor on the part of a few to change the relationship between medicine and osteopathy in its modern form.

All these and many other matters came before the delegates, some of them with as many as ten or eleven resolutions from as many state associations on the same subject matter. Differences of opinion were not lacking. The end result in each case, however, was a tempered and considered decision reflecting sober judgment and steady statesmanship on the part of the delegates as well as the reference committees involved.

Several resolutions were submitted at this meeting calling for a complete definition of the responsibility of the government in the medical care of the citizen. They closely followed a resolution to the same effect which had been introduced at the Denver Clinical meeting and referred to the Board of Trustees. The importance of such a definition, not only to medicine but to the future of all Americans, had been underlined by President Eisenhower who forecast in his message to Congress, appointment of a President's Commission to study the "whole question of federal control of activities to which the federal government contributes." Also by the bill introduced as House Joint Resolution 123, in the Congress, for an amendment to the Constitution prohibiting the United States government from engaging in any business not specified in the Constitution.

With such congressional and executive studies pending, the Board of Trustees recommended, and the House approved, continued study of the whole problem by the Committee on Federal Medical Services and its subsidiary Committees on Indigent Medical Care and on Maternal and Child Care with a report to be delayed until findings of the President's Commission may be available.

Children's Services Reviewed

In this connection, the action taken with respect to the Crippled Children's Services, financed jointly by the states and the federal government, might well be explained, in view of the scathing editorial on the subject printed in a recent *Life* magazine. The resolution, introduced by Dr. Cleone A. Nafe of Indiana, called attention to the fact that diagnostic services, under the plan must be made available within the area served by each diagnostic center to "any child (a) without charge, (b) without restriction or requirement as to the economic status of such child's family or relatives or their legal residence, and (c) without any requirement for the referral of such child by any individual or agency." The resolution asked, and the House approved, that the Board of Trustees work through whatever channels might be necessary to eliminate this section of the regulation. It called attention to the fact that a state which might institute a means test would have no federal funds allotted to it for crippled children's services. The resolution did not ask for elimination of free services to children who need them, as the *Life* editorial declared with considerable venom.

Another resolution with comparable objectives was recommended and passed to the effect that people who are able to do so be asked to pay for gamma globulin which, according to present plans of the National Foundation for Infantile Paralysis, will be distributed free of charge in polio-threatened areas. *Life* magazine failed to pick up this action along the same lines whose object was, of course, to preserve the money for polio research and for aid of afflicted patients. The Board will urge this course upon the National Foundation, in accordance with the resolution.

Actually, of course, *Life* did not initiate the current ground swell of public criticism of physicians. No less than 11 resolutions, of which the resolution adopted by the Minnesota State Medical Association's House of Delegates was one, were introduced on this subject. They came from all parts of the United States and most of them, like the Minnesota resolution, adopted by our House of Delegates in May, called such public remarks as those of Dr. Paul R. Hawley, director of the American College of Surgeons, irresponsible and unjustified, condemned them in fact and in principle and urged the American Medical Association to do everything in its power to curb such actions in the future. Several resolutions also urged appropriate councils of the association to establish billing procedures for all physicians acting jointly in the care of a single patient so as to assist in the handling of fee-splitting, one of the major charges made by Dr. Hawley.

The Reference Committee on Legislation and Public Relations considered these resolutions, the ethical problems involved and the violations of ethical principles cited particularly by Dr. Hawley and the governing board of the College of Surgeons. The conclusion of the committee's report, in which the House of Delegates concurred, follows:

> "Your reference committee claims no originality in stating an opinion often expressed by official spokesmen for the American Medical Association that some doctors of medicine violate the Principles of Medical Ethics. The committee believes that this involves relatively few physicians and that the geographical distribution is spotty. Human nature being what it is, this will probably always be true. The method evolved for dealing with the problem of unethical conduct and practices by the American Medical Association, while far short of perfection is still the best and most practical means of correcting these abuses and safeguarding the best interests of the public. This method is being and will continue to be followed. Dr. McCormick in his inaugural address called on constituent associations to become increasingly vigilant and aggressive in the pursuit and correction of abuses. Many of his predecessors have emphasized this continued need which is and always will be present, since doctors are subject to the same weaknesses of flesh and spirit as are other persons.
>
> "The American Medical Association must now and in the future always continue to enunciate to its members and to the public its stand on matters pertaining to abuses and evils in the practice of medicine. A positive public relations program must be maintained pointing out the good things the members of the American Medical Association are doing to promote the public health and welfare of the citizens of this country."

The requests for development of approved methods of joint billing were referred to the Judicial Council for further study.

In connection with efforts now being made in local associations all over the country to maintain active committees to investigate, pass upon and, if necessary, discipline members for unethical practices, considerable attention was given to the name by which such committees should be known. The name "mediation committee" was suggested and approved by one reference committee and the delegates. But the Council on Medical Service reported, on the basis of a study, that the name "Grievance Committee" was the most frequent and the most popular name, even among the larger state and county societies. The Council therefore reported that, while it was in agreement with the House that the American Medical Association should not dictate in such matters, the name "Grievance Committee" would continue to be used by the Council in all its own dealings with such organizations.

VA Care Defined

Action was finally taken by the delegates at this meeting on the heated and controversial question of medical care for non-service-connected disabilities in veterans' hospitals. The action taken was the one proposed, after careful study, by the Committee on Federal Medical Services at the Denver Clinical meeting last December. It called upon Congress and the Veterans' Administration to limit medical care and hospitalization benefits in Veterans' Administration and other federal hospitals to the following categories:

> (a) Veterans with peacetime or wartime service whose disabilities or diseases are service-incurred or aggravated; and
>
> (b) Within limits of existing facilities to veterans with wartime service suffering from tuberculosis or psychiatric or neurological disorders of non-service-connected origin, who are unable to defray the expenses of necessary hospitalization.

It was recommended and approved, further, that provision of medical care and hospitalization in Veterans' Administration hospitals for the remaining groups of veterans with non-service-connected disabilities be discontinued and that the responsibility for the care of such veterans revert to the individual and the community where it rightfully belongs.

Postponement last December was agreed upon after heated discussion in order that representatives of the American Medical Association, the veterans' organizations, the American Dental and Hospital Associations, the Department of Defense and the Veterans' Administration might have a chance to meet and perhaps agree on the data to be considered, if not on a solution to the problem. The Board of Trustees accordingly appointed a liaison committee of which Dr. Edwin S. Hamilton was chairman, to meet with representatives of the other groups named. There were several hours of open hearings in which the committee reported that all interested groups had a fair and full hearing. It was the opinion of the committee that no substantial inaccuracies were developed in the original special committee report. Although representatives of other groups asked that the report be rejected and that further meetings be held, the action taken followed the recommendation both of the Committee on Federal Medical Services and the Liaison Committee appointed by the Board.

Remarks by Mr. Louis K. Gough, Commander of the American Legion, who addressed the delegates in the course of the session, clearly indicated the dissatisfaction of veterans' organizations and the other groups with the decision of the delegates. Mr. Gough declared that abuses of the current entitlement to medical and hospitalization are negligible. He expressed disappointment that the meetings between the organizations involved had not been organized on a more permanent basis so that they might meet regularly and so erase evident misconceptions in the facts. He also cited some Legion studies now under way which he hoped the doctors would examine.

The close vote on a bill introduced in Congress subsequently to limit medical and hospital service for non-service-connected disabilities might well be regarded as a reflection of the action taken by the delegates in New York. The fact that many Congressmen reversed themselves on a later vote showed no doubt of the soundness of such a limitation but rather the force of veteran opinion to which they are all acutely sensitive.

Clarify Intern Program Rules

The whole problem of intern distribution and the qualification of hospitals for intern training was the subject of a variety of resolutions reflecting the scarcity of interns in general and the difficulties encountered by small hospitals in maintaining standards and attracting interns. Careful and detailed reports on the requirements and working, to date, of the revised "Essentials of an Approved Internship," first submitted in 1952 and approved for use in December, 1953, showed to the satisfaction of the House of Delegates that many of the criticisms voiced at this meeting were not justified. On the other hand, it was decided because of the dissatisfaction shown in reference committee hearings, first, that the rule be abolished whereby approval may be withdrawn for an internship program which for two consecutive years fails to obtain at least two-thirds of its slated complement of interns and, second, that further study be continued by a committee appointed by the Speaker of the House of Delegates, at least half of whom are to be doctors in private practice not connected with medical schools or affiliated hospitals.

The so-called "Matching Plan" for apportioning interns came in for criticism, too. This plan functions through an independent agency made up of equitable representation from the American Medical Association and the various hospital associations. Its objective is to act as a clearing house for applications for internships. The resolution asking for its abolishment was rejected but another condemning the "interference of teaching institutions with the operation of the plan" was given serious consideration and it was decided to request a restudy of its function by the agency with a view to implementing improvement.

The report of the Commission for the Improvement of Care of the Patient incorporated an eight-point program for improvements in nurse accreditation which was adopted in toto by the House. This program was submitted to the delegates in December and referred to the Board of Trustees for submission to the above committee for further study and consultation with the director of the Accreditation Program of the National League of Nursing. It provides for a number of constructive changes in current practices, notably a reduction of the present three-year program for diploma training, to two years: also, a chance for advancement, in selected cases, from trained practical nurse status to hospital diploma courses, and from hospital diploma status to collegiate degree courses.

Essentials for training of Medical Record Technicians, as distinguished from Medical Record Librarians, with more flexible and less demanding standards, were provisionally approved so that schools may be established as outlined next September. Further consideration and final action on the program was postponed until next December, however, when members will presumably have had time to study the program.

The problem of the relationship of the dental surgeon to the surgical service of a hospital was left over for study, also, from the December session. The final recommendation adopted at this session was the result of considerable consultation with the American Board of Oral Surgery (dental), the American Dental Association and the American Hospital Association. It reads as follows:

"The position adopted by the representatives at the meeting on March 21 was to the effect that the oral (dental) surgeon be assigned to a surgical service of a hospital and to perform such professional duties as the chief of the surgical service directs. The members of the American Board of Oral (dental) Surgery stated that this plan was fully satisfactory." Of interest in connection with this action is the definition of a dental-oral surgeon which was incorporated in the report and adopted. According to this definition "dental-oral surgery is to be limited to diseases of the teeth and jaws and lesions of contiguous soft tissues related to diseases of the teeth and jaws but excluding malignancies."

Hospital Relations Integrated

The over-all problem of medical-hospital relationships was considered at length by a Joint Committee of the Board of Trustees of the American Medical Association and the American Hospital Association and its recommendations to the delegates were adopted. These recommendations provide, in general, for closer integration between the medical staff, the administrative staff and the governing board of the hospital to the end that hospitals and physicians may aid each other in the delivery of the best possible care to the patient. It is the belief of the committee that mutual understanding will eliminate criticism and irritation between members of the hospital governing board, the medical staff and the administrator. It will also eliminate interference of administration in purely medical problems.

Two other resolutions on relationships in and out of the hospitals were submitted to the Board of Trustees for further study. One dealt with relationships to nonprofessional workers in the health field, the other with relationships to auxiliary workers in the field of medicine.

Warm Debate on Osteopathy

Still another problem in relationships developed considerable discussion and some difference of opinion. This one involved the relationship between medicine and osteopathy and the committee appointed by the Board of Trustees after the December meeting to study the matter, submitted an extensive report, including the history of osteopathy, current educational standards and requirements all over the country for admission to practice. In view of its findings, the committee, of which Dr. John W. Cline is chairman, made some radical recommendations which were not accepted by the Reference Committee. At the request of the Board of Trustees the Reference Committee recommended that "because of the length of the report and the controversial nature of the subject, the Board feels that the House should have adequate time for study and that the state associations should have an opportunity to express their opinions. Therefore it is recommended that the committee be continued but that action on the report be deferred until the June, 1954, session." Meantime, it was suggested that the House be prepared to answer the following questions:

1. Should modern osteopathy be classified as "cultist" healing?
2. Should doctors of medicine teach in osteopathic schools?
3. Should the relationship of doctors of medicine to doctors of osteopathy be a matter for determination by the several state associations?

A minority report of the reference committee, stressed improvement of the health of the American people as a consideration and the need for realistic leadership from the American Medical Association. It proposed immediate action instead of postponement for study, asked that doctors of medicine assist in elevating educational standards in osteopathic schools and that relationships be left for determination of the states.

Education in the specialties came in for attention in several quarters. Principally, critics of current procedure desired more representation on the specialty boards for men in practice and not allied with teaching institutions. They also desired more training in general practice for candidates for certification in the specialties. These matters will be studied further. The special committee appointed in December at the instance of Past-President Louis H. Bauer to study the possibility of requiring a period in general practice for all candidates in the specialties, was authorized to continue its investigation of the matter with a view to reporting next year.

Medical Education Fostered

The problem of financing medical education was discussed at length by Dr. Elmer L. Henderson, director of the American Medical Education Foundation and by Dr. Frank H. Lahey, trustee of the National Fund for Medical Education and a past president of the association, who until his recent death, was chairman of a special committee to solicit businessmen and organizations for funds. Dr. Lahey reported with enthusiasm on the response of business and industrial leaders to the appeal to keep medical education free of federal controls and subsidies. He estimated that doctors and their friends had given more than three million dollars (including direct alumni donations) for that purpose in the last three years as against an estimated deficit of 10 million dollars incurred annually by the schools.

Dr. Henderson reported that $906,000 has been contributed to the Foundation in 1951 and 1952 and that the number of contributors increased from 1,876 in 1951 to 7,259 in 1952, an increase of 287 per cent. The Foundation has turned over in excess of $1,650,000 to the National Fund for Medical Education which in turn made grants to each of seventy-nine approved medical schools of more than $2,918,000. The total amount raised and transferred in thirty months was $2,650,000. The goal in 1953, he said, is more than $2,000,000 and for this purpose the American Medical Association has already voted one half million to seed the campaign.

Most states are campaigning actively for the fund, according to Dr. Henderson's report. Indiana has given the largest amount per member but Nebraska raised $49,146 in cash and pledges in one month, with a doctor population of only 1,300. On the other hand, Illinois has voted to assess each member $20 a year for the fund, the first state to institute such an assessment. Among outstanding individual gifts to the fund was the contribution of $10,000 from the Auxiliary to the American Medical Association; also the $21,500 raised by one state committee of the Auxiliary and turned over to the Foundation.

Changes in By-Laws Voted

Four changes in the By-Laws pertaining to membership were adopted virtually as proposed by the Council on Constitution and By-Laws of which Dr. Louis A. Buie of Rochester, Minnesota, is chairman. The first specifically limited members to one type of membership at a time. Two others made it explicit that requests for exemption from payment of AMA dues must be transmitted through the constituent association to the Secretary of the American Medical Association. The third provides that "members temporarily in the Armed Forces may be excused from payment of AMA dues regardless of local dues exemption, for the period beginning January 1 or July 1 following date of the member's entrance into service."

Other changes adopted had to do with clarifying rules governing minority reports from reference committees and routine procedure of the reference committees. Also, a resolution requiring the Board of Trustees to appropriate money to provide sufficient funds, within the means of the Association to implement any policies, programs or measures adopted by the House of Delegates. This resolution which was adopted at the December meeting and referred to the Council was resubmitted to the delegates with a significant change. The altered statement was adopted for incorporation in the Constitution and By-Laws as follows:

> "All resolutions and recommendations of the House of Delegates pertaining to the expenditure of funds shall be referred to the Board of Trustees which shall determine if the expenditure is advisable. If it is decided that the expenditure is inadvisable, the Board shall report, at its earliest convenience, to the House of Delegates, the reason for its action. This procedure conforms to the statutes of the State of Illinois under which the American Medical Association is incorporated."

Important among changes in the By-Laws govering membership proposed at this session was the Minnesota resolution asking that payment of dues for the current year be sufficient, without payment of any back dues, in the event that a constituent state association should make annual payment of American Medical Association dues a requirement for membership in its association. This resolution was introduced at the direction of the Council by Dr. George Earl, Minnesota delegate, and the recommendation of the Reference Committee on Amendments to the Constitution and By-Laws which follows, was adopted by the delegates.

> "Your committee approves this resolution in principle," the committee said. "It believes that when a state association makes it mandatory to belong to the American Medical Association in order to be a member of the state medical society, then this provision of the resolution is sound policy. We do, however, believe that the various state medical associations should have time to study this resolution. We have been advised that some legal problems may arise at the state level. Your committee therefore recommends that copies of this resolution, with a copy of the remarks of the committee, be sent to the individual state medical societies and that this resolution be considered at the December, 1953, interim session of the House of Delegates."

Another change referred to the Council on Constitution and By-Laws for implementation concerned disciplinary action for members over whom county and state societies have no original jurisdiction. This amendment would provide that the Judicial Council, after due notice, and hearing could censure, suspend or expel any Service, Affiliate or Honorary member of the Association for an infraction of the Constitution and By-Laws or for a violation of the Principles of Medical Ethics. This action would bring many of the more vitriolic critics of medicine under direct disciplinary action of the Judicial Council.

Revision of the Principles of Medical Ethics is under way, as ordered in June, 1952, the Council reported, and a new preamble and conclusion were approved as submitted at this session.

The doctor-draft law, which was in the process of enactment by Congress at the time of the meeting received remarkably little attention at the New York session. One resolution bearing upon its operation was referred to the Council on National Emergency Medical Service for further study. This resolution asked that the opinion of the state medical advisory committee on the essentiality of a doctor be made final, in case of a dispute between local draft boards and committees.

It is obviously impossible in this résumé to describe or even mention all of the other actions and reports—some of them of great importance—at this meeting. For example, an exhaustive report was submitted by the Committee on Blood, on blood collection and banking all over the country which should be read in its entirety in the printed proceedings published in the June 27 issue of *The Journal of the American Medical Association.* In that connection, it is interesting to note that the Board of Trustees has taken under advisement for special study a plan proposed by California for establishment of a coordinated national blood bank program to be operated by the American Medical Association, the American Red Cross and other qualified agencies.

Other notable events of the proceedings included election of Dr. Alfred Blalock of Baltimore for the Distinguished Service Award. Also the presentation in person of the 26 millionth subscriber to Blue Shield, Mr. William P. Markham of Louisville, Kentucky.

Approve Bricker Resolution

The delegates also went on record in unanimous support of S.J. No. 1, the so-called Bricker resolution, which calls for an amendment to the Constitution limiting the treaty-making power of the executive and requiring that no treaty or executive agreement be made which conflicts with any provision of the constitution or which operates to regulate any of the purely domestic affairs of the United States.

Addresses of the president, the past president and the Speaker, always highlights of the proceedings, should be read carefully as printed in the June 20 issue of *The Journal.* Nine points emphasized by the new president, Dr. Edward J. McCormick, who took office at this meeting, constitute a sound and well-considered program for medicine all over and undoubtedly rate a brief capitulation here. Dr. McCormick urged the following upon all societies: active measures to promote proper distribution of doctors; 24-hour emergency call services for physicians everywhere; strong, fearless mediation committees to hear patient complaints; clarification of physician-hospital relationships by county and state medical societies; active development of voluntary health insurance by every county society; participation by individual physicians in all community affairs; better public relations by every physician in his own office including the utmost care to avoid overcharging, rudeness, and excessive waiting in the doctor's office; a closer contact between county and state societies and writers for press, radio and television; greater unity within the profession which should work as a team at all times, even when, as now, part of the pressure involved in the immediate threat of compulsory health insurance is off.

Officers, Guests Speak

As most people are already aware, the new President-Elect, chosen at this meeting, is Dr. Walter B. Martin of Norfolk, Virginia. The Vice President is Dr. Carl H. Gellenthien, Valmora, New Mexico. Dr. George F. Lull of Chicago, continues as Secretary, Dr. J. J. Moore as Treasurer and Dr. James R. Reuling of Bayside, New York, as Speaker of the House of Delegates, a post which he filled, as before, with admirable wisdom and fairness. Dr. Edwin S. Hamilton of Kankakee, Illinois, and Dr. Gunnar Gundersen of La Crosse, Wisconsin, were re-elected to the Board of Trustees. Dr. Julian P. Price, Florence, South Carolina, was elected to fill the unexpired term of Dr. Walter B. Martin.

Among the distinguished guests who addressed the delegates were two women of note, Mrs. Oveta Culp Hobby, already confirmed as Secretary of the new Department of Health, Education and Welfare, and Mrs. Ivy Baker Priest, Treasurer of the United States.

Doctors present were particularly interested in Mrs. Hobby's outline of what constitute "indispensable social services which serve the public health of the nation without affecting the doctor-patient relationship in medical practice."

They are, briefly: prevention of disease; medical research, the increasing cost and scope of which make it a field in which government support is increasingly sought; rehabilitation and restoration of the disabled in which private agencies work closely with government agencies and medical education. Local governments, with the private assistance of medical organizations, must meet an overwhelming deficit in funds if medical education is to be kept on a high level, Mrs. Hobby said.

One other point which greatly interested the delegates, the name of the Special Assistant for Health and Medical Affairs who is to serve in her department, was not disclosed by Mrs. Hobby. (Dr. Chester-Keefer of Boston was recently confirmed for this post.)

St. Louis has been selected for the December Clinical session; the 1954 meeting will be in San Francisco and the 1955 session in Atlantic City. Invitations were received from both Chicago and New York for the session of 1956. Decision awaits the progress both cities hope for in building new convention halls with adequate facilities.

George Earl, M.D.
F. J. Elias, M.D.
J. A. Bargen, M.D.
O. J. Campbell, M.D.

However accurately we carry out the health examination of the community, we cannot expect to achieve complete victory over infection until the public itself has become better informed. It sometimes happens that an infectious form of primary pulmonary tuberculosis runs such a rapid course that others have been infected long before the next scheduled examination. A flare-up of an older tuberculous infection may also occur rapidly. Such cases are, however, not common and the patient is brought to bed very soon. In many cases the ignorance and asocial, sometimes antisocial, attitude of the sources of infection have contributed to the spread of infection.—Tobias Gedde-Dahl, M.D., *The American Journal of Hygiene,* September, 1952.

Clinical Results* with Banthīne® Bromide

(Brand of Methantheline Bromide)

22 Published Reports Covering Treatment of 1443 Peptic Ulcer Patients with Banthīne

Comprising the reports published in the literature to date which give specific facts and figures of the results of treatment

AUTHORS	No. of Patients	Chronic, Resistant to Other Therapy	TYPES OF ULCERS				RELIEF OF SYMPTOMS (Chiefly Pain)				Surgery or Complications[1]	Side Effects Requiring Discontinuance of Drug[2]	EVIDENCE OF HEALING			
			Duodenal	Jejunal	Stomal	Gastric	Good	Fair	Poor	No Report			Complete	Moderate	None	No Report
Grimson, Lyons, Reeves	100	100	93	7			80	11	4		5		47		19	29
Friedman	15	15	14			1	5		4	6[3]			2			13
Bechgaard, Nielsen, Bang, Gruelund, Tobiassen	26	26	21			5	16	4	6				8	6	12	
McHardy, Browne, Edwards Marek, Ward	162		162				136	12	11		3	1	14	9	7	129
Segal, Friedman, Watson	34	34	34[4]				14	13			7	2	5		8	14
Brown, Collins	117	99	117				97	7	8		5	8	55	9	8	40
Asher	77		65		7	5	52	9	16			16		9	21	47
Rodriguez de la Vega, Reyes Oiaz	5	4	5				4		1					3	2	
Winkelstein	116	116	102	8		6	102		14				53		18	45
Hall, Hornisher, Weeks	18	18	18				11		1	6[5]			18			
Maier, Meili	38	38	24			14[6]	27	7	4[7]				10	2	5	21
Meyer, Jarman	25	18	25				21		4							25
Poth, Fromm	37	37	37				33	3	1				33	3	1	
Plummer, Burke, Williams	41	41	41				36		5				38		3	
McOonough, O'Neil	104	100	104				63	10	31			11	4		11	89
Broders	60	60	58		1	1	35	19	6				10	1	49[8]	
Legerton, Texter, Ruffin	11		11				11									11
Holoubek, Holoubek, Langford	76	69	76				35	27	10		4	10	26		10	36
Ogborn	42		39	2		1	42[9]									42
Shaiken	48	48	48				33	10	3		2		33	10	3	
Johnston	145	145	145				143		2			2	143		2	
Rossett, Knox, Stephenson	146		141			5	146					4[10]	53			93
TOTALS	*1443*	*968*	*1380*	*17*	*8*	*38*	*1142*	*132*	*131*	*12*	*26*	*54*	*552*	*52*	*179*	*634*
PERCENTAGES		*67.8*	*95.6*	*1.2*	*0.6*	*2.6*	*81.3*	*9.4*	*9.3*			*3.7*	*70.5*	*6.6*	*22.9*	

1. Not included in tabulations.
2. Included in "Relief of Symptoms" as "Poor" and in "Evidence of Healing" as "None."
3. Four had no symptoms when Banthine therapy was begun.
4. Of which seven were penetrative lesions and five partially obstructive.
5. No symptoms were present in four.
6. Two with symptoms only; no demonstrable ulcer.
7. Three were psychopathic patients and one had a ventricular ulcer of the lesser curvature.
8. Roentgen findings after treatment period of two weeks; forty-seven had duodenal deformity.
9. All returned to work within a week.
10. In these four, after relief of symptoms, Banthine was discontinued because of urinary retention.

During the past three years, more than 250 references to Banthine therapy in peptic ulcer and other parasympathotonic conditions have appeared in medical literature. Of these reports, 22 have presented specific facts and figures on the results of treatment in a total of 1,443 peptic ulcer patients, 67.8 per cent of whom were reported as chronic or resistant to other therapy. These results are tabulated above and show:

"Good" relief of symptoms was obtained in 81.3 per cent of the 1,405 patients on whom reports were available.

"Complete" evidence of healing was obtained in 70.5 per cent of the 783 patients on whom reports were available.

In all but 9.3 per cent, relief of pain was "good" or "fair." In all but 22.9 per cent, evidence of healing was "complete" or "moderate."

During treatment, 26 patients required surgery or developed complications other than ulcer which required discontinuance of the drug before results could be evaluated.

Of the remaining 1,417 patients, only 3.7 per cent experienced side effects sufficiently annoying to require discontinuance of the drug.

ACCEPTED COUNCIL ON PHARMACY AND CHEMISTRY AMERICAN MEDICAL ASSOCIATION

*Volume containing complete references, with abstracts of 39 additional reports, will be furnished on request by

G. D. Searle & Co.
P. O. Box 5110, Chicago 80, Illinois

✦ Reports and Announcements ✦

NORTHERN MINNESOTA MEDICAL ASSOCIATION

The annual meeting of the Northern Minnesota Medical Association will be held in Fergus Falls, Friday and Saturday, August 28 and 29, 1953. The annual banquet will be held Friday evening, August 28. The program for the two days is as follows:

Friday, August 28, 1953

Morning Session—10:00 A.M.

"Management of the Neurogenic Bladder."
Harold Walder, M.D., Duluth, Minnesota
"Treatment of Poliomyelitis."
Joseph P. Engel, M.D., Minneapolis, Minnesota
"Antibiotics in the Management of Staphylococcal Sepsis."
Robert I. Wise, M.D., Minneapolis, Minnesota
"Present Status of Drug Therapy in the Treatment of Allergic States."
Frederick W. Wittich, M.D., Minneapolis, Minnesota

Luncheon and Business Meeting—12:30 P.M.
Hosts: Park Region District and County Medical Society

Afternoon Session—2:00 P.M.

"Fluid and Electrolyte Balance"
Arthur H. Wells, M.D., Duluth, Minnesota
"Diagnosis and Treatment of Tumors of the Skin and Oral Cavity."
Lyle J. Hay, M.D., Minneapolis, Minnesota
"Aids in Foreseeing Obstetric Difficulties."
Bruce Williams, Duluth, Minnesota

Annual Banquet—6:30 P.M.

G. J. Mouritsen, M.D., Fergus Falls, *Presiding*
President, Northern Minnesota Medical Association
Remarks—O. J. Campbell, M.D., Minneapolis
President of the Minnesota State Medical Association
"Some Historical Facts and a Tribute"
L. H. Rutledge, M.D., Detroit Lakes, Minnesota
Remarks—Justus Ohage, M.D., St. Paul
President-Elect Minnesota State Medical Association
Address—"European Travels—Some Observations"
Frederick W. Wittich, M.D., Minneapolis, Minnesota

Saturday, August 29, 1953

Morning Session—9:00 A.M.

Clinico-Roentgen-Pathological Conference
Led by Henry G. Moehring, M.D., Duluth, Minnesota, assisted by those presenting material and cases.

SOUTHERN MINNESOTA MEDICAL ASSOCIATION

The annual meeting of the Southern Minnesota Medical Association will be held at St. John's Catholic School, Mankato, Minnesota, Monday, September 14, 1953. The program will be as follows:

Monday, September 14, 1953

St. John's Catholic School

Registration—8:00 to 9:00 a.m.

Morning Session—9:00 to 12:00 Noon

"A Survey of Small Intestinal Obstruction in a Small Group Practice."
John C. Mickelson, M.D., Mankato
"Regional Enteritis: Present Opinions Regarding its Treatment."
S. R. Maxeiner, M.D., Minneapolis
"Fluid Regulation in Nephritis and Nephrosis in Childhood."
E. C. Burke, M.D., Rochester
"The Intervertebral Disk Problem in the Teen Age Group."
D. R. Lannin, M.D., Saint Paul

Intermission

"Hazards of Arsenic in the Treatment of Asthma."
L. E. Prickman, M.D., Rochester
"Injection Therapy of Varicose Veins Using Sylnasol Foam, Complications, Indications, and Contraindications."
H. A. Alexander, M.D., Minneapolis
"Chemotherapy of Leukemia and Lymphosarcoma."
J. M. Stickney, M.D., Rochester

Luncheon Meeting—12:15 to 2:00 p.m.

Bethlehem Lutheran Church

Afternoon Session—2:00 to 5:00 p.m.

St. John's Catholic School

Case Report: "Acute Cervical Tumor in Mental Defective."
Heinz Bruhl, M.D., Faribault
Case Report: "Stromal Endometriosis."
R. F. Mears, M.D., Northfield
Case Report: "Gun Shot Wound of Kidney."
E. J. Richardson, M.D., Saint Paul
"Present Status of Surgery in the Treatment of Heart Disease."
Ivan D. Baronofsky, M.D., Minneapolis

Intermission

"Epidemiological Situation in Southern Minnesota 1953."
State Board of Health

"Conditions Confused with Leukemia in Children."
S. D. Mills, M.D., Rochester

"The Mankato Rehabilitation Center."
Wm. S. Chalgren, M.D., Mankato

"Current Trends in the Management of Infantile Hydrocephalus."
Henry S. Dodge, M.D., Rochester

Cocktail Hour—5:30 p.m.

Mankato Country Club
Courtesy of Mankato Pharmacists

Banquet—6:30 p.m.

Mankato Country Club

Remarks: O. J. Campbell, M.D., Minneapolis, President of the State Medical Association

Presidential Address: H. J. Nilson, M.D., Mankato

"Medical Tour of India."
Leo G. Rigler, M.D., Minneapolis

The Women's Auxiliary of the Blue Earth County Medical Society will entertain the visiting ladies.

Authors are requested to leave typewritten copies of their papers with the Secretary in order that they may be submitted to Minnesota Medicine for publication.

Application for membership may be made at the registration desk.

AMERICAN CONGRESS OF PHYSICAL MEDICINE AND REHABILITATION

The thirty-first annual scientific and clinical session of the American Congress of Physical Medicine and Rehabilitation will be held on August 31, September 1, 2, 3 and 4, 1953, at the Palmer House, Chicago.

Scientific and clinical sessions will be given on the first four days of the session. All are open to members of the medical profession in good standing with the American Medical Association.

Full information may be obtained by writing to the executive offices, American Congress of Physical Medicine and Rehabilitation, 30 North Michigan Avenue, Chicago 2, Illinois.

AMERICAN MEDICAL WRITERS' MEETING

The tenth annual meeting of the American Medical Writers' Association will be held at the Elk's Club, Springfield, Illinois, September 23, President Lewis J. Moorman, M.D., editor of the *Journal of the Oklahoma State Medical Association,* presiding. (The meeting will be held during the eighteenth annual meeting, Mississippi Valley Medical Society—September 23, 24, 25—at the same club.)

The morning session will feature a Symposium on Medical Writing by Julius Jensen, M.D., St. Louis, Steward G. Wolfe, Jr., M.D., Oklahoma City, Theodore R. Van Dellen, M.D., Chicago, Richard M. Hewitt, M.D., Rochester, Minnesota, and Lee D. von Antwerp, Chicago. Also papers on Medical Writing for Medical Students by Walter R. Bett, M.D., London, England, and Dean F. Smiley, M.D., Chicago. The afternoon session will feature a symposium on Medical Writing by a non-medical group of six from the *Southern Medical Journal,* Mayo Clinic, Illinois State Medical Society and the Universities of Oklahoma and Michigan. The evening session will feature a fellowship hour, dinner, presentation of awards and fellowships and an address by Walter R. Bett, M.D., of London, the distinguished British writer and libarian. With thirteen speakers on the program this is the most ambitious program the association has ever had. A detailed program may be secured from Harold Swanberg, M.D., Secretary, W.C.U. Building, Quincy, Illinois. All concerned with any phase of medical writing are cordially invited. There are NO registration fees.

AMERICAN UROLOGICAL ASSOCIATION AWARD

The American Urological Association offers an annual award of $1,000 (first prize, $500; second prize, $300, and third prize, $200), for essays on the result of some clinical or laboratory research in Urology. Competition shall be limited to urologists who have been in such specific practice for not more than ten years, and to men in training to become urologists.

The first prize essay will appear on the program of the forthcoming meeting of the American Urological Association, to be held at the Waldorf-Astoria, New York, New York, May 31 to June 3, 1954.

For full particulars, write to the Executive Secretary, William P. Didusch, 1120 North Charles Street, Baltimore, Maryland. Essays must be in his office before February 1, 1954.

EIGHTEENTH ANNUAL CONVENTION OF THE NATIONAL GASTROENTEROLOGICAL ASSOCIATION

The National Gastroenterological Association will hold its Eighteenth Annual Convention and Scientific Sessions at The Biltmore Hotel, Los Angeles, October 12, 13, 14, 1953.

The program will include a Symposium on Cirrhosis of the Liver; Panel Discussions on "Peptic Ulcer;" "Diseases of the Large Bowel" and "Latest Developments in Cancer Research," and additional papers on interesting subjects in gastroenterology and related fields.

Following the Convention, on October 15, 16, 17, 1953, the Association's Fifth Annual Course in Postgraduate Gastroenterology will be given at The Biltmore Hotel and the College of Medical Evangelists in Los Angeles. The Course will be under the personal direction of Drs. Owen H. Wangensteen of Minneapolis, Minnesota, and I. Snapper of Chicago, Illinois, who will be assisted by a faculty from the medical schools in and around Los Angeles.

THE SHELTERING ARMS
4330 River Road, Minneapolis 6, Minnesota
A HOSPITAL FOR TREATMENT OF POLIOMYELITIS
Acute and Convalescent
Fully Approved by American College of Surgeons
Modern treatment—Staff includes Kenny trained technicians

The Scientific Sessions on October 12, 13 and 14 are open to all physicians without charge. The Postgraduate Course will be open to only those who have matriculated in advance.

Further information concerning the program and details of the Postgraduate Course may be obtained by writing to the Executive Officer, National Gastroenterological Association, 1819 Broadway, New York 23, New York.

COURSE IN OCCUPATIONAL SKIN PROBLEMS

The Institute of Industrial Health, University of Cincinnati, will hold a course in Occupational Skin Problems, October 12-16, 1953. The general objective of the program is to fulfill the professional needs of the industrial physician. The program will be divided into three daily sessions, consisting of morning didactic lectures and clinical demonstration, afternoon field instruction in industrial plants, and evening panel discussions. The didactic presentations will include orientation in the anatomy, physiology and chemistry of the skin, consideration of the etiologic aspects, clinical types, diagnosis and treatment of occupational dermatoses, and discussion of specific measures of prevention and control. The evening sessions, in panel form, have been designed to present pertinent material on the subjects of cutaneous cancer, cutaneous allergy, and medico-legal problems. A clinic on industrial skin problems will be held.

There will be a registration fee of $50.00. Registration will be limited to fifty persons and application must be made before September 15, 1953.

For further information, write to the Secretary, Institute of Industrial Health, Kettering Laboratory, Eden and Bethesda Avenues, Cincinnati 19, Ohio.

1954 COLLEGE ESSAY AWARD

The Board of Regents of the American College of Chest Physicians offers three awards to be given annually for the best original contribution, prepared by any medical student studying for the degree of Doctor of Medicine, on any phase relating to the diagnosis and treatment of chest disease.

The first prize will consist of a cash award of $250 and a certificate. The second and third prizes will be certificates of merit. The Essay award is open to all medical students in accredited medical schools throughout the world.

The winning contributions will be selected by a board of impartial judges and will be announced at the Twentieth Annual Meeting of the American College of Chest Physicians to be held in San Francisco, California, June 17-20, 1954. All manuscripts become the property of the American College of Chest Physicians and will be referred to the Editorial Board of the College jour-

1 *to escape pollens*

2 alternatives for the hay fever patient

2 *to relieve symptoms*

Pyribenzamine®
hydrochloride
(tripelennamine hydrochloride Ciba)

Once atop Pike's Peak, your hay fever patient can enjoy freedom from pollens. But for patients who must remain in a high-pollen environment, you can institute this effective therapy: one or two Pyribenzamine tablets, 3 or 4 times daily.

Alone and as an adjunct to desensitization, Pyribenzamine has proved effective in relieving hay fever symptoms, as evidenced by thousands of published case reports. On the basis of this evidence, no other antihistamine combines greater clinical benefit with greater freedom from side effects.

For your prescription needs, Pyribenzamine 50 mg. tablets are available in bottles of 100 and 1000 at all pharmacies.

Ciba *Ciba Pharmaceutical Products, Inc., Summit, N. J.*

2/1920M

nal *Diseases of the Chest* for consideration. The College reserves the right to invite the winner of the first prize to present his contribution at the Annual Meeting.

Applicants are advised to study the format of *Diseases of the Chest* as to length, form, and arrangement of illustrations to guide them in the preparation of the manuscript. The following conditions must be observed:

1. Five copies of the manuscript typewritten in English (double spaced) should be submitted to the Executive Director, American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Illinois, not later than March 15, 1954.
2. The only means of identification of the author shall be a motto or other device on the title page and a sealed envelope bearing the same motto on the outside enclosing the name and address of the author.
3. A letter from the Dean or Chairman of the Department of Medicine of the medical school certifying that the author is a medical student studying for the degree of Doctor of Medicine and that the contents represent original work.

EIGHTH ANNUAL POSTGRADUATE COURSE ON DISEASES OF THE CHEST

The Council on Postgraduate Medical Education of the American College of Chest Physicians, in co-operation with the respective state chapters of the College as well as the staffs and faculties of the local hospitals and medical schools, will sponsor the Eighth Annual Postgraduate Course on Diseases of the Chest at the Hotel Knickerbocker, Chicago, Illinois, September 28-October 2, 1953, and the Sixth Annual Postgraduate Course on Diseases of the Chest to be held at the Hotel New Yorker, New York City, November 2-6, 1953.

These annual postgraduate courses endeavor to bring physicians up to date on recent advancements in the management and treatment of heart and lung disease. Tuition for each course is $75.

Further information may be secured by writing to the Executive Director, American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Illinois.

PAN AMERICAN MEDICAL WOMEN'S ALLIANCE, INC.

The Fourth Congress of the Pan American Medical Women's Alliance will be held at the Beekman Towers Hotel, First Avenue and 49th Street, New York, from September 24 through October 1, 1953. The morning hours will be given over to a scientific program of general interest. There will be round-table luncheon discussions with leaders speaking Spanish and English. Through the sponsorship of leading New York medical women those interested in a special field will have opportunities to attend clinics of their choice. The Medical Women's Association of New York is serving as hostess and planning a most delightful program, including tours of the New York Hospital-Cornell Medical Center and Columbia-Presbyterian Medical Center, a boat trip around Manhattan Island, tour and luncheon at the United Nations, visits to Radio City and the Empire State Building, and a drive to Hyde Park.

Dilaudid hydrochloride

(dihydromorphinone hydrochloride)

COUNCIL ACCEPTED

100 oral TABLETS
Dilaudid
hydrochloride
BILHUBER KNOLL CORP.
Dilaudid
Dilaudid

Powerful opiate analgesic - dose, 1/32 grain to 1/20 grain.

Potent cough sedative - dose, 1/128 grain to 1/64 grain.

Readily soluble, quick acting.

Side effects, such as nausea and constipation, seem less likely to occur.

An opiate, has addictive properties.

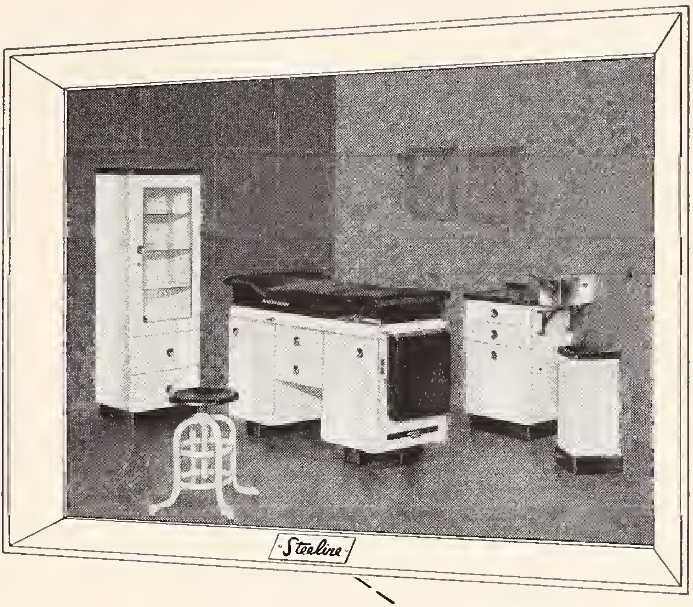
Dependable for relief of pain and cough, not administered for hypnosis.

● Dilaudid is subject to Federal narcotic regulations. Dilaudid, Trade Mark Bilhuber.

Bilhuber-Knoll Corp. Orange, N. J.

design achievement in treatment room furniture

New Steeline has gone through fifteen years of gradual development to reach the fine degree of design perfection it now has. The suggestions of scores of physicians and the engineering skill of our own production plant have been combined to produce this outstanding treatment room equipment. New features such as foam rubber cushioned contour top, magnetic door latches, concealed paper sheeting holder, superb color finishes, etc., are all fully described and illustrated in our new full-color brochure—send for yours today.



FREE... 16-page full-color brochure complete with specifications — send for your copy today.

A. S. ALOE COMPANY OF MINNESOTA • 927 Portland Avenue • Minneapolis 4, Minnesota

Hotel reservations should be made direct to the hotel. For further information write: Registration Chairman, Ina A. Marsh, M.D., 140 Linwood Avenue, Buffalo 9, New York.

MINNESOTA PUBLIC HEALTH CONFERENCE

The Minnesota Public Health Conference will hold its seventh annual meeting Thursday and Friday, September 24 and 25, at the Nicollet Hotel in Minneapolis.

Dr. Lee Burney, Indiana State Health Officer, will be the principal speaker at a banquet meeting Thursday evening. Thursday afternoon session will be devoted to a discussion of local health services in Minnesota.

Group meetings of special interest to physicians will be held all day Friday.

Last year more than 600 public health workers from all parts of the state attended the Conference.

MISSISSIPPI VALLEY MEDICAL SOCIETY MEETING

The eighteenth Annual Meeting, Mississippi Valley Medical Society will be held at the Elk's Club, Springfield, Illinois, Sept. 23-25. (The tenth Annual Meeting, American Medical Writers Association will also be held at the Elk's Club on Sept. 23.)

The meeting will feature forty-one speakers and over forty scientific and technical exhibits in an intensive three-day session with the entire program geared to especially appeal to men in general practice. The program will include a Symposium on Diabetes, a Clinico-Pathologic Conference and a Panel on "What Is New in Medicine and Surgery." There will be clinical teachers from the Universities of Illinois, Iowa, Louisville, Oklahoma, Tennessee, and from Northwestern, St. Louis and Washington Universities. The September 24 evening program will feature a presentation of awards and fellowships with the principal address by Assistant Secretary of Defense (Health and Medical) Melvin A. Casberg, M.D., Washington, D. C., formerly Dean of St. Louis University. A detailed program may be secured from Harold Swanberg, M.D., Secretary, W.C.U. Building, Quincy, Illinois. All ethical physicians are cordially invited and urged to attend. There are NO registration fees.

SYMPOSIUM ON CARDIOVASCULAR PHYSIOLOGY AND SURGERY

Under the auspices of the Minnesota Heart Association, the University of Minnesota will present a Symposium on Cardiovascular Physiology and Surgery on September 14 to 16 in the Museum of Natural History Auditorium on the University campus.

Participants will include such internationally known experts as Drs. W. G. Bigelow, Toronto; Clarence Crafoord, Stockholm, Sweden; Lewis Dexter, Boston; Charles T. Dotter, Portland, Oregon; John H. Gibbon, Philadelphia; Robert P. Glover, Philadelphia; William F. Hamilton, Augusta, Georgia; Dwight E. Harken, Boston; W. F. H. M. Mommaerts, Durham, North

Carolina; Willis J. Potts, Chicago; John W. Remington, Augusta, Georgia; Robert Rushmer, Seattle; C. W. Sheppard, Oak Ridge, Tennessee; Torgny Sjostrand, Stockholm, Sweden; Olle Snellman, Stockholm, Sweden; H. J. C. Swan, Rochester, Minnesota; Henry Swan, Denver; Richard W. Stow, Rochester, Minnesota; and E. Wetterer, Munich, Germany.

The symposium will be open, without tuition fee, to all physicians and to qualified investigators in the field of cardiac physiology. Housing accommodations will be available on the campus for out-of-town registrants who wish them. Further information may be obtained from the Director, Department of Continuation Medical Education, University of Minnesota Hospitals, Minneapolis 14, Minnesota.

CONTINUATION COURSES

Dental Problems in Medicine for Physicians will be presented by the University of Minnesota on October 21, 1953, at the Center for Continuation Study. The physician is from time to time confronted with a problem which is principally a dental one but for which he is called upon to render emergency treatment. In other instances the patient may seek his physician's advice as to whether a given dental procedure should be carried out. This course will attempt to provide useful information which will help the physician meet such problems. Subject matter will include examination of the teeth, gums, and mouth; oral manifestations of systemic disease; management of injuries involving the mouth and jaws; afflictions of the tempero-mandibular joint; and the fluoride problem. Faculty for the course will be made up of members of the faculties of the University of Minnesota Dental and Medical Schools.

* * *

Radiation Therapy for Specialists will be held at the Center for Continuation Study on the University of Minnesota campus from October 26 to 31, 1953. Principles and clinical applications of all forms of irradiation therapy will be discussed. The guest faculty will include Dr. Robert McWhirter, Professor, Department of Radiotherapy, Royal Infirmary, Edinburgh; Dr. Raymond Zirkle, Institute of Radiobiology and Biophysics, University of Chicago; Dr. Edith Quimby, Department of Radiology, Columbia University, New York; and Dr. Lauren V. Ackerman, Professor of Surgical Pathology and Pathology, Washington University School of Medicine, St. Louis, Missouri. The course will be presented under the direction of Doctors Leo G. Rigler, Professor and Head, Department of Radiology, and K. W. Stenstrom, Director of Radiation Therapy. Members of the faculty of the University of Minnesota Medical School and the Mayo Foundation will complete the faculty for the course.

* * *

The University of Minnesota, in conjunction with the American College of Chest Physicians and the Minnesota Chapter of the American Trudeau Society, will present a continuation course on *Diseases of the Chest* October 15 to 17, 1953. Intended primarily for physicians engaged in general practice, the course will emphasize management of frequently-met chest problems. Three outstanding visiting speakers will participate in the program: Dr. Andrew Banyai, Associate Clinical Professor of Medicine, Marquette University Medical School, Milwaukee, Wisconsin; Dr. Donald S. King, Consultant, Tuberculosis Service Veterans Administration Area No. 1, Boston, Massachusetts; and Dr. Dan Morse, Medical Director and Superintendent, Peoria Municipal Tuberculosis Sanitarium, Peoria, Illinois. The remainder of the faculty will include members of the clinical and full-time faculty of the University of Minnesota Medical School and the Mayo Foundation.

* * *

The University of Minnesota will present a course in *Hematology for Medical Technologists* at the Center for Continuation Study on October 6 to 7, 1953. This year's course is designed to emphasize technical aspects of hematology of use to the medical technologists. The program will be presented under the direction of Dr. Gerald T. Evans, Director of Hospital Laboratories, and the faculty will include members of the staff of the University of Minnesota Medical School.

NEW COURSE FOR LABORATORY AIDS

A twelve-month course for laboratory aides—a pioneer venture by the general extension division and the college of medical sciences—will begin September 28 at the University of Minnesota.

HOMEWOOD HOSPITAL is one of the Northwest's outstanding hospitals for the treatment of Nervous Disorders—equipped with all the essentials for rendering high-grade service to patient and physician.

Operated in Connection with
Glenwood Hills Hospitals

HOMEWOOD HOSPITAL
Corner Penn and Plymouth Avenues North
Minneapolis Minnesota

ACCIDENT • HOSPITAL • SICKNESS

INSURANCE

For Physicians, Surgeons, Dentists Exclusively

ALL PREMIUMS COME FROM → PHYSICIANS SURGEONS DENTISTS ← ALL CLAIMS GO TO

$5,000 accidental death Quarterly $8.00 $25 weekly indemnity, accident and sickness	$15,000 accidental death Quarterly $24.00 $75 weekly indemnity, accident and sickness
$10,000 accidental death Quarterly $16.00 $50 weekly indemnity, accident and sickness	$20,000 accidental death Quarterly $32.00 $100 weekly indemnity, accident and sickness

COST HAS NEVER EXCEEDED AMOUNTS SHOWN

ALSO HOSPITAL INSURANCE

	Single	Double	Triple	Quadruple
60 days in Hospital	5.00 per day	10.00 per day	15.00 per day	20.00 per day
30 days of Nurse at Home	5.00 per day	10.00 per day	15.00 per day	20.00 per day
Laboratory Fees in Hospital	5.00	10.00	15.00	20.00
Operating Room in Hospital	10.00	20.00	30.00	40.00
Anesthetic in Hospital	10.00	20.00	30.00	40.00
X-Ray in Hospital	10.00	20.00	30.00	40.00
Medicines in Hospital	10.00	20.00	30.00	40.00
Ambulance to or from Hospital	10.00	20.00	30.00	40.00
COSTS (Quarterly)				
Adult	2.50	5.00	7.50	10.00
Child to age 19	1.50	3.00	4.50	6.00
Child over age 19	2.50	5.00	7.50	10.00

$4,000,000.00
INVESTED ASSETS

PHYSICIANS CASUALTY ASSOCIATION
PHYSICIANS HEALTH ASSOCIATION
51 years under the same management
400 First National Bank Building
Omaha 2, Nebraska

$19,500,000.00
PAID FOR CLAIMS

$200,000.00 deposited with State of Nebraska for protection of our members

Geared to prepare young men and women for work as laboratory assistants to medical technologists and physicians, the course will include six months of classes on the University campus and six months of practical training in Twin City hospital laboratories.

The course will be run in conformity with the requirements for certification of laboratory aide under the Registry of Medical Technologists of the American Society of Clinical Pathologists. After successfully completing this course and after a year's work under a qualified physician, students will be eligible to take the certification examination.

Those enrolled in the program will attend classes during the University's regular fall and winter quarters. Starting March 29, 1954, they will begin their clinical training. Comprehensive examinations, scheduled September 13-27, 1954, will round-out the course.

Students will take a curriculum consisting of courses in physiological chemistry, human anatomy, basic laboratory techniques, electrocardiography and basal metabolism, blood bank techniques, urinalysis and elementary hematology, bacteriology, and physiology.

The course is open to high school graduates with college aptitude ratings of 40 percentile or higher, who are in the top half of their high school class and who fulfill the necessary personal qualifications such as an ability to work with people, a liking for science, and integrity. Since enrollment will be limited, students will be selected on a basis of scholastic aptitude and vocational promise.

Applications for the course can be obtained from the Medical Technology Office, W225, University Hospitals, University of Minnesota, Minneapolis 14. The forms must be returned by August 21.

AMERICAN COLLEGE OF CHEST PHYSICIANS

The twentieth annual meeting of the American College of Chest Physicians will be held in San Francisco, California, June 17-20, 1954. Physicians interested in presenting scientific papers on any phase in the diagnosis and treatment of heart and lung disease should send a 100-word abstract, not later than January 1, 1954, to Dr. Edgar Mayer, Chairman of the Committee on Scientific Program, 850 Fifth Avenue, New York 21, New York.

Woman's Auxiliary

NORTHERN MINNESOTA AUXILIARY PLANS ANNUAL MEETING

Mrs. Robert D. Estrem

Doctors and their wives from the northern part of Minnesota will be attending the annual meeting of the Northern Minnesota Medical Association in Fergus Falls on August 28 and 29, 1953.

Auxiliary members will be entertained at a luncheon on Friday, August 28, and will meet for breakfast on Saturday, August 29. They are also invited to attend the Friday night banquet with their husbands.

In Memoriam

ALEXANDER AUBIN

Dr. Alexander Aubin, a physician of Minneapolis for thirty-six years, died June 26, 1953, at St. Cloud, Minnesota.

Dr. Aubin was born in Canada, September 10, 1872. He graduated magna cum laude from Laval University, Quebec, Canada, in 1902. He practiced medicine in Minneapolis from 1912 until his retirement in 1948.

Dr. Aubin is survived by his daughter, Mrs. Joseph B. Gaida of St. Cloud; a sister, Mrs. Z. Bonneville of Cornwall, Canada, and two brothers, Alfred of Saint Paul and Albert of Edmonton, Canada.

WALTER MEREDITH BOOTHBY

Dr. Walter M. Boothby, well known for his work in metabolism and aviation medicine, died of a heart condition in Albuquerque, New Mexico, July 3, 1953. Dr. Boothby had retired from the Mayo Clinic and Foundation in 1948 and, on invitation from the King of Sweden, spent two years at the University of Lund continuing his work in aviation medicine. Following his return to the United States, he was awarded the order of Commander of the North Star, one of the top Swedish honors. In 1950 Dr. Boothby joined the professional staff of the School of Aviation Medicine at Randolph Field, San Antonio, Texas, and later became associated with the Lovelace Clinic in Albuquerque. Dr. Boothby was one of the world's foremost scientists in aviation medicine and during World War II, with Dr. William Randolph Lovelace and Dr. A. H. Bulbulian, developed in Rochester the BLB oxygen mask for aviators.

Dr. Boothby was born July 28, 1880, in Boston. He received the degree of B.A. in 1902, of M.D. in 1906, and of M.A. in 1907 from Harvard University. He interned at the Boston City Hospital for eighteen months; practiced surgery in Boston for seven years; was in charge of the metabolism laboratory at the Peter Bent Brigham Hospital, Boston, from 1913 to 1916; was instructor in anatomy from 1910 to 1916, and lecturer on anesthesia in the Harvard Medical School from 1914 to 1916. He entered the Mayo Clinic as head of the Section on Metabolism in November, 1916, and also was associate professor of medicine, the Mayo Foundation. During World War I he was with the A.E.F. in France for twenty-two months as captain and major in the Medical Corps; he was assigned for the greater part of the time to the Gas Defense Service. He was also at the front as chief of the surgical team for the St. Mihiel and Argonne battles. He became head of the Section on Aviation Medicine and Research, Mayo Foundation, in January, 1942.

Dr. Boothby was certified by the American Board of Internal Medicine as a specialist in internal medicine. He was a fellow of the American College of Surgeons, of the American College of Physicians and of the Aero Medical Association of the United States, and associate fellow of the Institute of Aeronautical Sciences. He was a member of the Massachusetts Medical Society, the American Physiological Society, the American Society of Biological Chemists, the American Society for Clinical Investigations, the Society for Experimental Biology and Medicine, the American Medical Association, the American Institute of Nutrition, and American Society for Experimental Pathology, the American Society for Pharmacology and Experimental Therapeutics, the Association of American Physicians, the Alumni Association of the Mayo Foundation, and Sigma Xi.

On November 15, 1930, Dr. Boothby married Catherine Burns who with two daughters, Mrs. Louis A. Schulze of Rochester and Mrs. Robert Reinhardt of Detroit, survive him.

GERHART A. DAHL

Dr. Gerhart A. Dahl, of Mankato, died July 15, 1953. He was born June 23, 1872, in Dell, Faribault County, Minnesota. After graduation from Luther College, Decorah, Iowa, he attended Hahnemann Medical College in Chicago, where he graduated in 1893.

Dr. Dahl came to Mankato in 1897 and began practice with the late Dr. W. A. Beach. He was one of the founders of the Mankato Clinic and continued his association with the clinic until his retirement in 1946.

For eighteen years, Dr. Dahl was a medical officer of the Minnesota 205th Infantry regiment of the Minnesota National Guard and served as a major in the organization from June 22, 1918, until his sixty-fourth birthday, on June 23, 1936. He was one of the few guardsmen in the state to be decorated by the state government for meritorius service. For almost thirty years, Dr. Dahl was coroner for Blue Earth County.

On August 29, 1903, Dr. Dahl married Alma Hanson in Mankato. He is survived by his wife, a sister and two nieces.

EDWIN G. EKLUND, JR.

Word has been received of the death of Dr. Edwin G. Eklund, Jr., in North Korea on February 28, 1951.

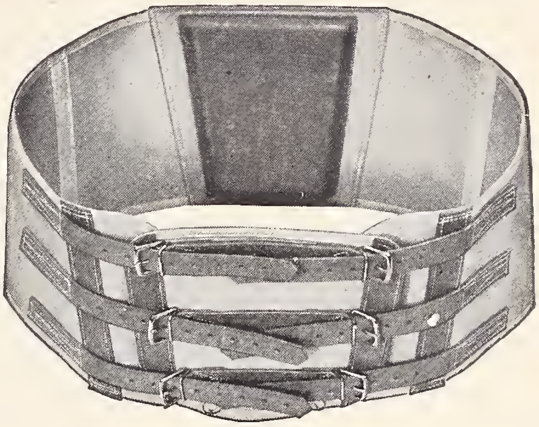
Dr. Eklund is a graduate of the University of Minnesota and went to Korea as a battalion aid surgeon in August, 1950. He was captured at Kunu-ri, North Korea, on December 1, 1950. He died of pneumonia and malnutrition.

Dr. Eklund is survived by his wife who lives at 1727 LaSalle Avenue, Minneapolis, and his mother, Mrs. Edwin G. Eklund, of Spring Lake Park.

AUGUST F. HUNTE

Dr. August F. Hunte, formerly of Truman, Minnesota, died at Alhambra, California, July 5, 1953, at the age of eighty-two.

Dr. Hunte was born at Beecher, Illinois, August 5, 1870. He obtained his M.D. degree from Rush Medical College in 1899 and practiced at Truman from 1899 to



Popular Type **SACRO-ILIAC BELT**

This high-grade sacro-iliac support is made of orthopedic webbing, 6 inches wide, well reinforced and supplied with perineal straps.

To determine size needed, take measurements around hip, 3 inches below the iliac crest. Stock sizes 30 to 44. Extra sizes available on special order.

Professional Price $5.95

Abdominal Supporters *Elastic Stockings* *Trusses*

C. F. ANDERSON CO., INC.
Surgical and Hospital Equipment
ATlantic 6508, ZEnith 2055 **901 Marquette Ave.**
MINNEAPOLIS 2, MINNESOTA

1930, when he moved to Bylas, Arizona. There he became a physician in the United States Indian Service at the San Carlos Indian Reservation. Following his wife's death, he and his daughter, Frances, moved to Alhambra, California. He is survived by his daughter.

During World War I Dr. Hunte served as an officer in the Medical Corps of the Army, being assigned to Base Hospital 114 of the A.E.F.

F. PAUL KORTSCH

Dr. F. Paul Kortsch, a physician of Prior Lake, Minnesota, since 1936, died July 15, 1953, aged forty-nine.

Dr. Kortsch was born in Saint Paul, Minnesota, July 2, 1904. He obtained his medical degree from the University of Colorado in 1935 and interned at St. Barnabas Hospital in Minneapolis and at St. Mary's Group of Hospitals at St. Louis, Missouri. He had done graduate work at Cook County Hospital, Chicago.

On June 15, 1929, he married Kathryn Niebergall, who with one daughter, Kathy, and two sons, Tommy and Jay, survive him.

Dr. Kortsch was a member of the Scott-Carver County Medical Society, the Minnesota State Medical Association, and the American Medical Association.

LINUS F. LEITSCHUH

Dr. Linus F. Leitschuh of Winsted, Minnesota, died on June 28, 1953, at the age of forty-one. He obtained his medical degree from the University of Minnesota in 1938 and interned at Minneapolis General Hospital from 1937-39. He practiced at Red Lake Falls and Foley before moving to Winsted. During World War

AT YOUR CONVENIENCE, DOCTOR . . .

you are cordially invited to visit our new and modern prescription pharmacy located on the street floor of the Foshay Tower, 100 South Ninth Street.

With our expanded facilities we will be able to increase and extend the service we have been privileged to perform for the medical profession over the past years.

Exclusive Prescription Pharmacy

Biologicals Pharmaceuticals Dressings
Surgical Instruments Rubber Sundries

JOSEPH E. DAHL CO.
(Two Locations)
100 South Ninth Street, LaSalle Medical Bldg.
ATlantic 5445 Minneapolis

Cook County Graduate School of Medicine

POSTGRADUATE COURSES—1953

SURGERY—Intensive Course in Surgical Technic, two weeks, starting September 14, September 28, October 12
Surgical Technic, Surgical Anatomy and Clinical Surgery, four weeks, starting October 26
Surgical Anatomy and Clinical Surgery, two weeks, starting August 17, November 9
Gallbladder Surgery, ten hours, starting October 26
General Surgery, one week, starting October 5
Surgery of Colon and Rectum, one week, starting September 21
Basic Principles in General Surgery, two weeks, starting September 21
Thoracic Surgery, one week, starting October 12
Esophageal Surgery, one week, starting October 19
Breast and Thyroid Surgery, one week, starting October 26
Fractures and Traumatic Surgery, two weeks, starting October 26
GYNECOLOGY—Intensive Course, two weeks, starting September 21
Vaginal Approach to Pelvic Surgery, one week, starting August 31
OBSTETRICS—Intensive Course, two weeks, starting October 5
DERMATOLOGY—Intensive Course, two weeks, starting October 19
MEDICINE—Electrocardiography and Heart Disease, two weeks, starting October 12
Intensive General Course, two weeks, starting September 28
Gastroenterology, two weeks, starting October 26
Allergy, one month and six months, by appointment
CYSTOSCOPY—Ten-Day Practical Course starting every two weeks
UROLOGY—Intensive Course, two weeks, starting September 28

TEACHING FACULTY—ATTENDING STAFF OF COOK COUNTY HOSPITAL

ADDRESS: REGISTRAR, 707 South Wood Street, Chicago 12, Illinois

STOP . . .

BEFORE YOU BUY YOUR NEW CAR— SEE US . . .

we can save you money on the finance charge.

AMERICAN NATIONAL BANK
OF SAINT PAUL

Bremer Arcade Robert at 7th CE 6666

Member Federal Deposit Insurance Corporation

II, Dr. Leitschuh served as captain in the Army Medical Corps for five years.

He was a member of the McLeod County Medical Society, the Minnesota State Medical Association and the American Medical Association.

Dr. Leitschuh is survived by his wife, two daughters, Carol and Jean, and two sons, Paul and Nicolas. His parents, Mr. and Mrs. Henry Leitschuh, reside in Sleepy Eye.

A. MASON RANDALL

Dr. A. Mason Randall of Ashby, Minnesota, died suddenly on June 20, 1953.

Dr. Randall was born at Sechlerville, Wisconsin, December 2, 1880. He graduated from the College of Medicine, Hamline University, in 1903 and opened an office at Underwood, Minnesota, the same year. In 1909, he moved to Ashby, where he practiced until his death.

On July 22, 1905, Dr. Randall was united in marriage to Anna Mortenson. His wife and one son, Carter, of Ashby, survive him.

Dr. Randall was a member of the Park Region District and County Medical Society, Minnesota State Medical Association and American Medical Association.

Between November, 1917, and June, 1919, Dr. Randall served as captain in the Medical Corps of the Army. He was interested in civic affairs and served thirty-one years on the school board. He was a member of the American Association of Railway Surgeons, Minnesota Association of Railway Surgeons, Ashby Community Club and staff of St. Luke's Hospital in Fergus Falls.

PATRICK J. GALLAGHER

Dr. Patrick J. Gallagher, formerly a resident of Graceville, Minnesota, died on July 12, 1953, in Seattle, Washington, at the age of seventy-four.

Dr. Gallagher was born in Westport, Ireland, and came with his parents to Graceville in early childhood. He was graduated from the University of Minnesota Medical School in 1904 and practiced medicine at Connel, Washington, for many years.

In 1918, Dr. Gallagher became medical director of the New World Life Insurance Company in Seattle, a post he held until his final illness forced him to resign.

He was a member of the King County Medical Society and the Washington State and American Medical Associations. A sister and brother, Mrs. P. H. Costello and A. E. Gallagher, both of Graceville, survive him.

The Birches Sanitarium, Inc.

2391 Woodland Avenue
Duluth 3, Minnesota

A hospital for the care and treatment of Nervous and Mental disorders. Quiet, cheerful environment. Specially trained personnel. Recreational and occupational therapy.

Dr. L. R. Gowan, M.D., M.S., Medical Director

North Shore
Health Resort
Winnetka, Illinois

*on the Shores of
Lake Michigan*

A completely equipped sanitarium for the care of nervous and mental disorders, alcoholism and drug addiction offering all forms of treatment, including electric shock.

SAMUEL LIEBMAN, M.S., M.D.
225 Sheridan Road — Medical Director — Phone Winnetka 6-0211

It had to be good
to get where it is

Coca-Cola
TRADE MARK REGISTERED

DRINK
Coca-Cola
REG. U. S. PAT. OFF.

THE COCA-COLA COMPANY

Of General Interest

Dr. A. D. Fetzek, recently graduated from the University of Minnesota Medical School, who interned at Minneapolis General Hospital, joined the St. Michael clinic staff early in July. Dr. Fetzek will practice with **Dr. R. D. Thielen.**

* * *

Dr. S. W. Giere, of Benson, chairman of the Swift County Heart Fund Campaign, was the recipient of a merit award from the Minnesota Heart Association, in June. The citation referred to Dr. Giere as a "public-spirited Minnesotan who places humanitarian ideals above self-interest" and as one "who has earned mankind's gratitude for the future reduction of the ravages of heart disease."

* * *

Dr. Frank Hammond Krusen, of Rochester, specialist in physical medicine for twenty-three years, was named Minnesota's nominee, June 26, for the President's award in 1953. The award is given annually to a physician who has made a significant contribution to the rehabilitation and employment of persons with physical impairments.

Dr. Krusen has been head of the Mayo Clinic's physical medicine section for eighteen years. He was chairman, in 1944, of Bernard Baruch's committee on war and postwar physical rehabilitation, is past president of the American Congress of Physical Medicine, has been councillor of the National Association for Crippled Children since 1947, serves on the board of the Minnesota Rehabilitation Association, and is the author of many widely circulated books and articles in the physical medicine field.

* * *

Dr. H. O. Hagen, of New Richland, was unable to attend a dinner at Chicago University given by the Alumni of the Rush Medical College honoring the graduates of 1903, held in June. Dr. Hagen has been ill for the past year.

* * *

Dr. Lyle A. Weed, of Rochester, received an honorary degree of Doctor of Science from his alma mater, Simpson College, of Indianola, Iowa, May 31.

* * *

Dr. and Mrs. Joseph Flynn, of Richfield, celebrated their fiftieth wedding anniversary in June. Dr. Flynn, now retired, was graduated from Rush Medical College in 1900 and practiced for many years in Minneapolis.

* * *

Dr. W. L. Patterson, of the Fergus Falls State Hospital, gave the address of welcome to the farmers attending the Grassland Field Day held at the State Hospital grounds, June 9. The field day program consisted of tours of farm tracts and various demonstrations of farm implements and equipment. There are 600 acres in cropland at the state hospital.

Dr. Jack Delmore, of Roseau, president of the Red River Valley Medical Society, welcomed the guest legislators and newspapermen of Northwestern Minnesota who attended the Red River Valley Medical Society's dinner reception, held at East Grand Forks, June 8. **Dr. L. E. Dale,** Red Lake Falls, presided as toastmaster, and local arrangements were made by **Dr. O. K. Behr,** of Crookston.

* * *

Dr. S. J. Raetz, of Maple Lake, attended the fifth annual convention of the International Academy of Proctology which was held in New York, New York, May 28 to 31, 1953. Dr. Raetz was recently elected to a Fellowship in the International Academy.

* * *

Dr. James K. Heid, of Browerville, who recently was graduated from the University of Minnesota Medical School, was married June 20, to Barbara Anne Hadley, also of Browerville. Classmates of the groom, **Drs. Lyle Haberland** and **Maland Hurr,** were ushers.

* * *

Roseau County physicians, meeting in Roseau, June 22, formed "The Roseau County Medical Society," with **Dr. D. O. Berge,** president, and **Dr. Robert J. Delmore,** secretary. Other doctors of the county are **J. L. Delmore, Jack Delmore,** and **Gilbert S. Wheeler,** all of Roseau; **Kenneth Nelson,** of Warroad, and **L. H. Klefstad,** of Greenbush.

* * *

Dr. Erick Cukors, who has been a member of the Fergus Falls State Hospital staff, left July 1 to accept a position at the Jamestown, North Dakota, State Hospital.

* * *

Dr. Robert Bormes, recently on the staff of the Veterans Hospital at Milwaukee, Wisconsin, joined the Olive Clinic at Graceville, in June.

* * *

Dr. Bela Gallo, of Czechoslovakia, began the practice of medicine in Lake Bronson in June. Dr. Gallo received his medical degree from the University of Prague in Czechoslovakia, but did some of his study at the University of Budapest, Hungary. The citizens of Lake Bronson sponsored Dr. Gallo's coming to the United States. Recently Dr. Gallo completed the two years of medical education in the United States necessary for becoming licensed in this country.

* * *

Mrs. J. A. Poirier, seventy-three, wife of **Dr. J. A. Poirer,** veteran physician of Forest Lake, died June 13. Mrs. Poirier had been ill for several months.

* * *

Dr. Jan Tillisch, of the Mayo Clinic, attended a

Why Should You Own Municipal Bonds?

BECAUSE—

Your money is invested in a class of security that has been proved to be second only to U. S. Government bonds in certainty of payment.

It has been authoritatively reported that less than 2% of all municipal issues defaulted during the depression and nearly all of these were cleared up without loss of principal.

BECAUSE—

Your money earns an income that is not subject to current federal income taxes —you are not adding to your tax burden from your investment income.

Income from state and municipal bonds has never been subject to the levy of federal income taxes.

BECAUSE—

Your money is securely invested and you need not be concerned with "Day-to-day market fluctuations."

Municipal bond investors buy bonds for interest income to maturity without market worries in the meantime.

BECAUSE—

Your money is invested at a known yield or rate of return.

The income from municipal bonds is not contingent upon the action of a board of directors—semi-annual interest coupons are attached to each bond to be deposited in your bank as they mature.

BECAUSE—

Your money would be invested in a class of security known to conservative investors for many years.

Municipal bonds have been issued in this country since prior to the Revolutionary War. They are actively traded in a market with a greater volume than all bonds traded on the stock exchange.

Write or call for descriptive circulars

JURAN & MOODY

MUNICIPAL SECURITIES EXCLUSIVELY

TELEPHONES:
GArfield 9561
PRior 6423

93 E. SIXTH STREET
ST. PAUL 1, MINNESOTA

meeting of the executive committee of the Aero Medical Association in Washington, D. C., June 20.

* * *

Dr. B. Melby, of Blooming Prairie, was honored June 17, by the community members paying tribute to his fifty years of medical practice. On "Dr. Melby night" everyone in the community was invited to join in the demonstration of civic appreciation of a good citizen.

Dr. Melby was presented with a gold clock-pen desk set and a framed, hand-lettered scroll commemorating his fiftieth anniversary of practicing medicine. He has been a member of the American Medical Association for over fifty years.

Practicing in Blooming Prairie since 1905, not only has Dr. Melby served the medical needs of the community but for thirty-nine years served as a member of the Board of Education. In February, 1951, he was honored in being awarded a scroll by the Minnesota Educational Association for his long and faithful interest and work in the public schools.

* * *

To assist work on three polio research projects at the University of Minnesota, the March of Dimes awarded grants aggregating $113,000, in June.

One grant of $83,646 was awarded to **Dr. Jerome T. Syverton,** professor of bacteriology and immunology, toward developing a rapid laboratory test for polio diagnosis.

Dr. A. B. Baker, professor of neurology, was awarded supervision of a grant of $24,511, to expand studies of brains and spinal cords from fatal cases of bulbar poliomyelitis.

A grant of $5,671 went to **Dr. Gaylord W. Anderson**, Mayo professor of public health, who will continue a careful analysis of data collected on polio patients during the 1946 Minnesota epidemic.

* * *

Dr. A. A. Bailey, of the Mayo Clinic, attended the meeting of the Canadian Neurologic Society, held in Winnipeg, Canada, June 20. Dr. Bailey is a member of the Council of the Society, and recently became a member of the American Neurological Association.

* * *

Dr. R. C. Magnuson, of Cambridge, was recently drafted for military service. **Dr. K. A. March** was appointed village health officer, in June, to succeed Dr. Magnuson.

* * *

Dr. D. A. Boyd, Jr., of Rochester, attended a meeting of the Special Medical Advisory Group to the Veterans Administration in Washington, D. C., June 8.

* * *

Dr. A. C. Peterson, of Dassel, celebrated his fiftieth year in the practice of medicine in June. Forty-eight of the fifty years have been spent in Dassel. Several years ago Dr. Peterson was forced to curtail his practice because of ill health, but since he is the only doctor in the community he is again doing all his health will permit in caring for the sick of the community. Dr. Peterson is seventy-eight years old.

* * *

Dr. Robert Teif, a graduate of the University of Minnesota Medical School, joined **Dr. M. J. Bernier**, of North Saint Paul, in his practice, July 1.

* * *

Dr. B. P. Grimes, superintendent of the State Hospital at St. Peter, was guest speaker at the meeting of the Exchange Club of St. Peter, June 24.

* * *

Dr. Hobert J. Setzer, Jr., son of **Dr. and Mrs. Hobert J. Setzer**, Saint Paul, who recently graduated from the University of Minnesota Medical School, was married, June 20, to Margaret Jean Larson, of Minneapolis. Dr. Setzer is interning at Minneapolis General Hospital.

Dr. P. S. Hench, of the Mayo Clinic, who was recently elected to the Board of Regents of the American College of Physicians, attended a meeting of the committee on fellowships and awards of the College, held in Ann Arbor, Michigan, July 20.

* * *

The furnishing of narcotics pursuant to telephone advice of practitioners is prohibited, whether prescriptions covering such orders are subsequently received or not, except that in an emergency a druggist may deliver narcotics through his employe or responsible agent pursuant to a telephone order, provided the employe or agent is supplied with a properly prepared prescription before delivery is made, which prescription shall be turned over to the druggist and filed by him as required by law.

* * *

A television program **"News at Noon"** sponsored by the Blue Shield and Blue Cross is appearing on Channel 4, WCCO-TV each noon, 12:00 to 12:15, Monday through Friday. The program is said to be worth watching and calling to the attention of others.

* * *

Dr. Henry E. Michelson, of Minneapolis, has been chosen to give the William Allen Pusey oration before the Chicago Institute of Medicine on September 23, 1953. His subject will be "A Review and an Appraisal of the Present Knowledge of Lupus Erythematosus."

* * *

Dr. Howard J. Frykman, of Minneapolis, was a guest speaker at the combined meetings of the Wright County Medical Society and the Buffalo Hospital staff, which was held July 7, at Beecher's Resort on Clearwater Lake. Dr. Frykman spoke on "Common Office Proctological Problems."

* * *

The **South Dakota Board of Medical Examiners** has announced the passage of legislation creating an annual registration fee for licenses in that state in the amount of $2.00. The registration takes effect January 1, 1954. Those licensed in South Dakota who wish to maintain their license by payment of the registration fee, please contact the South Dakota Board of Medical Examiners, 300 First National Bank Building, Sioux Falls, South Dakota.

* * *

Dr. David T. Carr, Mayo Clinic, Rochester, was a guest speaker at a dinner meeting held during the forty-sixth annual meeting of the Nebraska Tuber-

P&H

A Complete Service

FOR THE MEDICAL AND HOSPITAL PROFESSION

Physicians & Hospitals Supply Company, Inc.

1400 Harmon Place • Minneapolis 15, Minnesota

Patients' Lounge

Saint Paul's Exclusive

CRESTVIEW

NEUROPSYCHIATRIC

HOSPITAL

New . . Modern . . Complete . .

Providing the highest standard of service at the lowest cost.

- Occupational therapy and recreational department.
- Complete X-ray and laboratory.
- Electrocardiography—basal metabolism.
- Electroencephalography available.
- All patients rooms air-conditioned.
- Background music and psychotherapy sound equipment.
- Medically staffed by every neurologist and psychiatrist in Saint Paul.
- Especially trained nursing staff.

MEMBER of the American Hospital Association
MEMBER of the Minnesota Hospital Association
APPROVED by the Minnesota State Medical Association
and the Ramsey County Medical Society.

CRESTVIEW HOSPITAL • 145 W. College Ave., St. Paul
GArfield 5841

A non-profit organization

culosis Association, June 17-18, in Omaha, Nebraska. Dr. Carr cited some of the "miracles" in tuberculosis work in his talk, "Magic Bullets Against Tuberculosis."

* * *

Dr. Stewart T. Ginsberg, formerly of Saint Paul, was named manager of the new 956-bed neuropsychiatric hospital at Pittsburgh, Pennsylvania, June 25. Dr. Ginsberg received his medical degree from the University of Minnesota in 1932.

* * *

Dr. Walter P. Gardner, of Saint Paul, was appointed by Gov. C. Elmer Anderson, to represent the medical profession on the new state advisory commission on the problem of alcoholism. The board, as appointed by Governor Anderson, began functioning July 1, as provided by recent legislation.

* * *

Dr. H. O. Mortenson, of Pequot Lakes, recently separated from the Army Medical Corps, began practice in Menahga, July 1. Dr. Mortenson was graduated from the University of Minnesota Medical School in 1951. He was awarded the bronze star for meritorious service in Korea.

* * *

Dr. Russell M. Wilder, former member of the Mayo Clinic staff, retired as director of the National Institute of Arthritis and Metabolic Diseases at Bethesda, Maryland, July 1. Dr. Wilder, internationally known as an authority on diabetes and nutrition and the first director of the NIAMD, retired because of ill health.

* * *

Dr. Catherine B. Friedrich, of Red Wing, became the bride of **Dr. Harlan David Root,** of Brainard, New York, June 26, at a ceremony held in the Christ Episcopal Church at Red Wing. Dr. Friedrich and Dr. Root both received their medical degrees from Cornell University, Ithaca, New York.

* * *

Dr. Bryson Roy McHardy, of Minneapolis, became a member of the permanent staff of the Karlstad Hospital, Karlstad, Minnesota, in July. Dr. McHardy was graduated from the University of Minnesota Medical School and served in the Air Force in World War II.

* * *

Dr. James W. Halvorson, who has been recalled to the Navy, was honored at a testimonial dinner given June 30 by the Goodhue community members. Dr. Halvorson has practiced in the Goodhue community for three years and will report to the Navy in August.

* * *

Dr. Owen C. Bolstad, formerly of the Duluth Clinic, began practice in Little Falls in July, in association with **Drs. D. L. Johnson, A. H. Benson,** and **W. F. Skaife.** Dr. Bolstad, a graduate of the

University of Minnesota Medical School, completed his internship at St Luke's Hospital at Duluth.

* * *

Dr. Robert D. Koenig, Ancker Hospital, Saint Paul, began practice in Paynesville in July. Dr. Koenig is replacing **Dr. Ray Lindeman,** who was recalled to service with the U. S. Air Force.

* * *

Dr. W. W. Rieke, of Wayzata, joined **Dr. Richard F. Kline** in his practice at Grand Rapids in July. Dr. Rieke is replacing **Dr. David Feigal,** who is serving with the Army Medical Corps.

* * *

Dr. and Mrs. J. S. Blumenthal, of Columbia Heights, Minneapolis, celebrated their twenty-fifth wedding anniversary, June 27. Dr. Blumenthal has practiced in Columbia Heights for thirty years.

* * *

Dr. James H. Reinhardt (Lt. MC), formerly in practice in Alexandria, was named chief of the department of obstetrics and gynecology at the James Connally Air Force Base Hospital at Waco, Texas.

* * *

Dr. Owen H. Wangensteen, chief of surgery at the University of Minnesota Medical School, was the recipient of a $15,000 grant from the Damon Runyon Memorial Fund for Cancer Research, in July. Dr. Wangensteen will use the funds to restudy operations on patients suffering with gastric, colon, and rectal cancer.

* * *

Four new physicians to receive appointments to the staff of the Mayo Clinic in July, were **Dr. Richard W. P. Achor, Dr. James C. Broadbent, Dr. Robert L. Faucett,** and **Dr. Richard E. Symmonds.**

Dr. Achor received his medical degree from the University of Oregon Medical School, Portland, in 1945, and served with the Navy for two years. He interned and was a medical resident at Ancker Hospital, Saint Paul. In January, 1950, Dr. Achor entered the Mayo Foundation as a fellow in Medicine and received the degree of master of science in Medicine from the University of Minnesota, in July.

Dr. Broadbent received his medical degree from the Stanford University School of Medicine in 1946, and interned at Los Angeles County General Hospital. He served with the Army Medical Corps from 1947 to 1949, and entered the Mayo Foundation as a fellow in Medicine in November, 1949. Dr. Broadbent received the degree of master of science in Medicine from the University of Minnesota in July.

Dr. Faucett received the degree of master of arts in Bacteriology from the Graduate School of the University of Kansas in 1940, and his medical degree from the University of Kansas Medical School, in 1944. He interned and was a pediatric resident at the University of Kansas Hospital. From 1946 to 1948, he was a resident in psychiatry with the United States Public Health Service. Lexington, Kentucky, and from 1948 to 1949, a resident in psychiatry at the University of Minnesota Hospitals. Since 1951, Dr. Faucett has been director of the United States Public Health Service Demonstration Mental Health Clinic, College Park, Maryland.

Dr. Symmonds received his medical degree from Duke University School of Medicine in 1946, and interned at the Los Angeles County Hospital. He served with the Navy for several years. Dr. Symmonds entered the Mayo Foundation as a fellow in Obstetrics and Gynecology in April, 1950, and received the degree of master of science in Obstetrics and Gynecology from the University of Minnesota in July.

* * *

Dr. Leighton W. Larson, originally from Canistota, South Dakota, joined **Dr. J. W. Bratholdt** in his practice in Watertown, in July. Dr. Larson is a graduate of the University of Minnesota Medical School and interned at St. Luke's Hospital in Chicago. He was recently released from military service with the Army Medical corps in the Far East.

* * *

Dr. James Blake, of Hopkins, was named to represent the Minnesota State Medical Association on the eleven-member advisory council on unemployment due to temporary sickness or disability. The committee, appointed by Gov. C. Elmer Anderson in July, was authorized by the recent Legislature to make a comprehensive study of the possible need for a program to provide unemployment benefits for persons temporarily idled by reason of sickness or disability who are not compensable under workman's compensation insurance.

* * *

Dr. L. H. Stahn, who has been on the staff at the Anoka State Hospital for three years, was recalled to service with the Army and left July 1, for San Antonio, Texas.

* * *

Dr. Robert Nelson, and **Dr. Warren Kilmer,** both recently completing their internships at Minneapolis General Hospital, began practice in International Falls in July. Dr. Nelson was graduated from the University of Minnesota Medical School, and Dr. Kilmer, from the University of Indiana Medical School.

Insurance at a Saving Druggists' **Mutual Insurance** Company *Prompt Loss Service*
OF IOWA, ALGONA, IOWA
Fire - Tornado - Automobile Insurance
MINNESOTA REPRESENTATIVE—S. E. STRUBLE, WYOMING, MINN.

Dr. Anthony H. Kelly, who recently completed a fellowship in surgery in the Mayo Foundation, left July 8 for an extended tour of Europe which will include clinical visits in many cities and attendance at a surgical congress in Lisbon, Portugal.

* * *

Four physicians to enter the Mayo Foundation as fellows during the summer quarter, which began July 5, are the sons of Mayo Clinic staff members, and one, the son of an emeritus Clinic physician.

Dr. John A. Higgins, a graduate of the University of Minnesota Medical School, is the son of **Dr. George M. Higgins,** of the Mayo Clinic.

Dr. Louis A. Brunsting, Jr., a graduate of the University of Michigan Medical School, is the son of **Dr. Louis A. Brunsting**, of the Mayo Clinic staff.

Dr. Louis A. Buie, Jr., a graduate of the University of Minnesota Medical School, is the son of **Dr. Louis A. Buie, Sr.,** of the Mayo Clinic staff.

Dr. Richard M. Moersch, a graduate of Harvard Medical School, is the son of **Dr. H. J. Moersch**, of the Mayo Clinic staff.

Dr. Henry W. Pemberton, a graduate of the George Washington University School of Medicine, is the son of **Dr. John deJarnette Pemberton,** an emeritus member of the Mayo Clinic staff.

* * *

Dr. Arthur T. Laird, who retired from the Moose Lake State Hospital staff July 15, was honored by the hospital employes and their families at a picnic held July 7.

Dr. Laird's four years at Moose Lake State Hospital are only the most recent of a career of over half a century of contributions to medicine. The first eleven years of his career, Dr. Laird spent in private practice in Albany, New York, and as a member of the medical staff at Trudeau Sanatorium, Saranac Lake, New York. Dr. Laird came to Nopeming Sanatorium as superintendent in 1911, and served in this capacity for thirty years. During World War I, he was chosen by the Rockefeller Foundation to work with the French government in demonstrating the most recent advances in the care of tuberculosis patients.

Following his retirement from Nopeming Sanatorium, Dr. Laird became associated with the Duluth Clinic until 1947, when he came to Moose Lake for several months to study conditions in Minnesota mental hospitals. In 1949, he returned as a permanent member of the staff.

* * *

Dr. Merrill D. Chesler, of Minneapolis, spoke to the members of the Stearns-Benton County Medical Society at their meeting held July 16, at the St. Michael's Hospital, Sauk Centre. His talk, illustrated with slides, was entitled "Skin Grafts, Flaps and Related Plastic Problems."

* * *

Dr. Edward Burleigh, a graduate of the University of Louisiana Medical School, and **Dr. Jack Bonner,** a graduate of the University of Minnesota Medical School, joined the East Range Clinic of Virginia, in July.

COMPLETE
OPHTHALMIC
SERVICE
FOR THE
PROFESSION

Complete Laboratories in Minneapolis and Principal Cities of Upper Midwest

EXECUTIVE OFFICES
MINNEAPOLIS, MINN.
SINCE 1913

Benson
OPTICAL COMPANY

THE
MEDICAL PROTECTIVE
COMPANY
FORT WAYNE, INDIANA

PROFESSIONAL PROTECTION
EXCLUSIVELY
SINCE 1899

specialized service
assures *"know-how"*

MINNEAPOLIS Office:
Robert L. McFerran, Rep.,
2426 Clinton Ave. So., Apt. E-8,
Telephone Fillmore 1292

Dr. William R. Glenny, of Minneapolis, joined the staff of the Osseo Clinic early in July. Dr. Glenny was graduated from the University of Minnesota Medical School and served in the Navy during World War II.

* * *

Dr. J. A. Malerich, Jr., joined his father, **Dr. J. A. Malerich, Sr.,** in the practice of medicine in Saint Paul, in July. Dr. Malerich, Jr., was graduated from the University of Minnesota Medical School and completed his internship at Ancker Hospital in Saint Paul.

* * *

Major appointments in health and related fields made by the President recently include:

Dr. Melvin A. Casberg, former dean of St. Louis University Medical School who has been serving as a special assistant to the Secretary, was appointed to be Assistant Secretary of Defense for Health and Medical Affairs, a post whose establishment has been long advocated by the American Medical Association. Dr. Casberg will supervise the department's medical programs and advise the Secretary of Defense on health policies.

Harvey V. Higley, of Marinette, Wisconsin, chairman of the board, Ansul Chemical Company, was appointed to be head of the Veterans Administration. Mr. Higley has been active for many years in the American Legion, serving as state commander and member of the Legion's National Executive Committee and National Retirement Committee. He succeeds Carl R. Gray, Jr., who recently resigned.

Russell R. Larmon, professor of administration at Dartmouth College, was appointed to be an Assistant Secretary of Health, Education, and Welfare. Prof. Larmon is one of two Assistant Secretaries provided under Reorganization Plan 1 which elevated the Federal Security Agency to cabinet status. Prof. Larmon has served as consultant on many New Hampshire state commissions.

Hall, Anderson & Nordehn

PRESCRIPTION PHARMACY
BIOLOGICALS
PHYSICIANS' SUPPLIES

SAINT PAUL, MINN.

LOWRY MEDICAL ARTS BUILDING
TELEPHONE: CEDAR 2735

MINNESOTA BLUE CROSS-BLUE SHIELD PLANS

Analysis of Blue Shield claim rejections from October 1, 1952, to date for those rejections based on the grounds of pre-existing conditions discloses several interesting facts. First, it reveals an actually smaller number of such rejections; secondly, it shows a reduction in the percentage of claims disallowed for this reason; and finally, dissatisfaction and misunderstanding on the part of both subscribers and doctors regarding such claims is definitely decreasing.

On October 1, 1952, the revised Blue Shield contract went into effect thereby establishing a new standard for deciding claims involving pre-existing conditions. Prior to October 1, 1952, the Blue Shield contract required a ten-month waiting period before benefits could be paid for treatment of those conditions which, on the date of receipt of the application, were known to exist by the subscriber or any member of his family. The new contract now provides that benefits are not available for the treatment of any physical condition, ailment, or disease which, known or unknown to the participant subscriber, may be considered from a medical standpoint to have been in existence on the effective date of the contract unless the participating subscriber has been covered under the contract for at least ten consecutive months at the time the services are rendered. The most important change, then, is the elimination of the requirement that the subscriber know that he has had a particular condition, ailment, or disease. Now, under the new contract, if services are rendered to a subscriber who has been covered by the contract less than ten months, and the condition is one which, from a medical standpoint, could be said to have been in existence on the effective date of the contract, the claim cannot be approved.

The current review of operations from the time the new contract went into effect until the present shows a decided improvement in relationships between Blue Shield and the doctors, between Blue Shield and the subscribers, and between the doctors and the patients regarding this matter. The claims can now be explained on a much more factual basis and disagreements with subscribers are greatly reduced.

The Professional Relations Department reports that in discussions with the doctors in their offices, understanding of the clause and its purpose is much clearer, and the clause is approved in almost every instance. The same information comes from the Claims Department wherein contact is had with subscribers either by correspondence, telephone conversations, or personal calls. Both subscribers and doctors are apparently realizing that Blue Shield cannot afford to pay benefits to those who join the plan after they discover that they might need medical, surgical, or obstetrical services. It is being

PATTERSON SURGICAL SUPPLY COMPANY

130 W. Seventh Street, St. Paul 2, Minn.
HOSPITAL AND PHYSICIANS SUPPLIES AND EQUIPMENT
Cedar 1781-82-83

understood that waiting periods for pre-existing conditions and maternity care are necessary to avoid costly and dangerous over-utilization of Blue Shield benefits. Furthermore, the records under the new contract are showing that the change in this clause has had distinctly beneficial effect in producing this result. Because of safeguards such as this, the public, the medical profession, and Blue Shield can look forward to the attainment of their mutual goal—adequate medical care at the lowest possible cost.

On July 1, 1953, University Hospital became an affiliated hospital of the Blue Cross plan. All subscribers going to University Hospital will now receive full contract benefits while hospitalized there.

Blue Cross is now celebrating its twentieth anniversary. From a humble beginning in 1933 with only eight hospitals backing the plan, Blue Cross has grown by leaps and bounds. The concept of prepayment of hospital care has proven to be wise and farseeing, for today over 169 Minnesota hospitals sponsor the Blue Cross plan.

Blue Cross was designed to provide the best hospital care to people who needed care at the lowest possible cost. Evidence of the fact that Blue Cross is providing more people with the best care is that we now have nearly one million Minnesotans protected (one out of every three), a remarkable growth.

Since 1933, Blue Cross has paid over $83,000,000 in benefits to subscribers.

For BETTER Birth Control Since 1934

No Finer Name in Contraceptives...

COOPER CREME
TRADE MARK
The original vaginal creme
ACCEPTED COUNCIL ON PHARMACY AND CHEMISTRY
FORMULA:
A product of WHITTAKER LABORATORIES, INC. PEEKSKILL, N.Y.

Active Ingredients
Trioxymethylene 0.04%
Sodium Oleate 0.67%

HELP FOR PROBLEM DRINKERS

Hazelden Foundation (non-profit) is dedicated to the treatment of problem drinking through research, education, and rehabilitation. It has ideal facilities on Lake Chisago near Center City, Minn. Your inspection is invited at any time.

HAZELDEN FOUNDATION

Let us send you complete information

A NON-PROFIT ORGANIZATION

2639 University Avenue **St. Paul 14, Minnesota**
24-hour service **Phone NEstor 5958**

BROWN & DAY INC SAINT PAUL U.S.A. SERVICE QUALITY

For Professional Supplies and Service

BROWN & DAY, INC.
St. Paul 1, Minnesota

BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical Libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

OPERATIVE SURGERY. 2 Vols. Sixth Edition. Guy W. Horsley, B.S., M.D., F.A.C.S., Associate Professor of Surgery, Medical College of Virginia; Attending Surgeon, St. Elizabeth's Hospital, Richmond, Virginia; and Isaac A. Bigger, M.D., F.A.C.S., Professor of Surgery, Medical College of Virginia, Surgeon-in-Chief, Medical College of Virginia Hospital, Richmond. Vol. 1, 714 pages; Vol. 2, 1579 pages. Illus. Price $30.00, cloth. St. Louis: C. V. Mosby Co., 1953.

ANNUAL REPORT ON THE RESULTS OF TREATMENT IN CARCINOMA OF THE UTERUS. Statement of Results Obtained in 1946 and previous years. 8th Volume. Sponsored by American Cancer Society, British Empire Cancer Campaign, Cancerföreningen, Stockholm, Damon Runyon Memorial Fund, New York, Landsföreningen mot Kreft, Oslo, and National Cancer Institute of Canada. 247 pages. Available on application. Stockholm 60: Editorial Office, Radiumhemmet, 1953.

STUDIES IN VISUAL OPTICS. By Joseph I. Pascal, B.S., M.A., O.D., M.D., Licentiate in Optometry and in Medicine by the University of the State of New York; Director of Eye Department, Stuyvesant Polyclinic; Attending Ophthalmologist, New York Polyclinic Medical School and Hospital, Outpatient Department; Lecturer in Ophthalmology, New York Polyclinic Medical School and Hospital. 800 pages. Illus. Price $12.50. St. Louis: C. V. Mosby Co., 1952.

In this book, Dr. Pascal presents the theoretical and practical aspects of many phases of visual optics and refraction techniques. His optometric as well as medical training and experience give him a unique orientation on these subjects.

Dr. Pascal's formula for ophthalmic calculations is simple and effective and well presented. His concept of the accommodative unit clarifies such things as the earlier onset of presbyopia in hyperopes.

This book is valuable and interesting additional reading, but would not replace the standard simpler textbooks for the novice.

J. A. McNeill, M.D.

PROGRESS IN FUNDAMENTAL MEDICINE. J. F. A. McManus, Editor. 316 pages. Illus. Price $9.00. Philadelphia: Lea & Febiger, 1952.

The editor of Progress in Fundamental Medicine has assembled a series of monographs, presenting the current information, primarily pathological, but including its application to clinical medicine. The subject matter includes parenteral nutrition with an exhaustive survey of the use of protein hydrolysates and amino acid mixtures; a chapter on the liver, histochemistry, viral hepatitis and other pertinent subjects; coronary disease considered not a pathological entity, but as a symptom complex.

Other topics, in a similar manner, include the histochemical approach to pathology, melanotic tumors of the skin, systemic lupus erythematosus, carcinoma *in situ* and non-silica pneumonoconioses.

This volume gives a complete summary of present-day knowledge of the various subjects including a very complete table of references. This will prove of great value to the student as well as the clinical practitioner, in keeping informed of the rapid advances in these various phases of modern medicine.

C. K. Williams, M.D.

The Medical Book Guild of America offers a large list of books by nationally famous editors at a substantial saving with special gift "bonus" books. (See page 808).

RADIUM RENTAL SERVICE
4340 CEDARWOOD ROAD
MINNEAPOLIS 5, MINNESOTA
TEL. ATLANTIC 5297

Radium element prepared in type of applicator requested

ORDER BY TELEPHONE OR MAIL
PRICES ON REQUEST

Buy Defense Bonds

DANIELSON MEDICAL ARTS PHARMACY, INC.
10-14 Arcade, Medical Arts Building
825 Nicollet Avenue—Two Entrances—78 South Ninth Street
MINNEAPOLIS
PHONES:
ATLANTIC 3317
ATLANTIC 3318
HOURS:
WEEK DAYS—8 to 7
SUN. AND HOL.—10 TO 1

Distributors to the profession

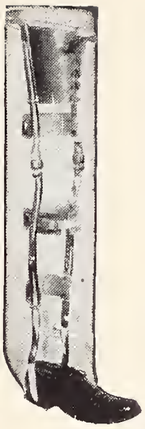
of fine

Injectable Vitamins and Endocrines

Interstate Pharmacal Company

P.O. Box 252 Beloit, Wis.

MAIL ORDERS SHIPPED IMMEDIATELY



RELIABILITY!

For years we have maintained the highest standards of quality, expert workmanship and exacting conformity to professional specifications . . . a service appreciated by physicians and their patients.

ARTIFICIAL LIMBS, TRUSSES,
ORTHOPEDIC APPLIANCES,
SUPPORTERS, ELASTIC HOSIERY

Prompt, painstaking service

Buchstein-Medcalf Co.
223 So. 6th St. Minneapolis 2, Minn.

Index to Advertisers

Abbott Laboratories....802, 812, 813
Aloe, A. S., Co.... 877
American National Bank.... 882
Ames Co., Inc.... 798
Anderson, C. F., Co., Inc.... 881
Ayerst, McKenna & Harrison.... 810

Benson Optical Co.... 889
Birches Sanitarium, Inc.... 882
Bilhuber-Knoll Corporation.... 876
Brown & Day, Inc.... 891
Buchstein-Medcalf Co.... 893

Camel Cigarettes.... 803
Caswell-Ross Agency.... 794
Ciba Pharmaceutical Products.... 875
Classified Advertising.... 894
Coca-Cola Co.... 883
Cook County Graduate School of Medicine.... 882
Cordelia of Hollywood.... 806
Crestview Hospital.... 887

Dahl, Joseph E., Co.... 881
Danielson Medical Arts Pharmacy, Inc.... 892
Druggists Mutual Insurance Co.... 888

Ewald Bros....Inside Back Cover

Fuller Pharmaceutical Co.... 804

Glenwood Hills Hospitals.... 895

Hall, Anderson & Nordehn.... 890
Hazelden Foundation.... 891
Homewood Hospital.... 878

Interstate Pharmacal Co.... 893

Juran & Moody.... 885

Lederle Laboratories....Facing Page 808
Lilly, Eli, & Co....Front Cover, 800, 801, 816

Mead Johnson & Co.... 896
Medical Book Guild of America.... 808
Medical Protective Co.... 889
Merch & Co., Inc.... 815
Milwaukee Sanitarium....Back Cover
Mounds Park Hospital....Back Cover

North Shore Health Resort.... 883

Parke, Davis & Co....Inside Front Cover, 793
Patterson Surgical Supply Co.... 890
Pfizer Laboratories.... 805
Physicians Casualty Association.... 879
Physicians & Hospitals Supply Co....807, 886
Professional Credit Protective Bureau.... 799

Radium Rental Service.... 892

St. Croixdale Sanitarium.... 796
Schering Corporation.... 809
Searle, G. D., & Co.... 871
Sheltering Arms.... 874
Squibb, E. R., & Sons.... 814

Ulmer Pharmacal Co.... 894
Upjohn.... 797

Whittaker Laboratories.... 891
Winthrop-Stearns, Inc.... 811

Classified Advertising

Replies to advertisements with key numbers should be mailed in care of Minnesota Medicine, *2642 University Avenue, Saint Paul 14, Minn.*

FOR RENT—Attractive doctor's suite in south Minneapolis. Wonderful location for a practice to be built up, or as an outlying office for a downtown doctor. Write Wm. L. Cochrane, 7301 Fremont Avenue South, Minneapolis 19, Minnesota. Telephone RO 9-8758.

FOR SALE—American crystal controlled mobile diathermy—XM400 dynotherm. Council-accepted, practically new, with stand—$300. Address E-371, care Minnesota Medicine.

FOR SALE—Instrument cabinet and some instruments, 404 Physicians and Surgeons Building, Minneapolis. Call Locust 4412.

UNUSUAL OPPORTUNITY FOR GENERAL PRACTITIONER to take over large practice established for twenty-five years in Saint Paul. Must retire because of poor health. Latest equipment optional, including completely furnished laboratory—shock proof x-ray, EKG, diathermy, basal metabolism, cauteries, et cetera. Will introduce. Address E-376, care Minnesota Medicine.

URGENTLY NEEDED: General practitioner to take over practice of 2,000 patients. Physician recently deceased. Desirable offices in stone building; five rooms completely equipped; beautiful living quarters. For further information, call Garfield 5878, Saint Paul, between 9 A.M. and 5 P.M. or Dale 5459 after 5 P.M.

WANTED—Locum tenens for one or more months. Address E-377, care Minnesota Medicine.

WANTED—Associate in general practice, prefer someone with surgical experience. Address E-378, care Minnesota Medicine.

FOR SALE—Active practice, home also available if desired, terms reasonable. Address E-379, care Minnesota Medicine.

PLACEMENT SERVICE

The Minnesota State Medical Association maintains a Medical Placement Service for the benefit of physicians who are looking for locations and positions; also for communities, medical groups and physicians who are looking for licensed medical assistance. For information, write to the Minnesota State Medical Association, 496 Lowry Medical Arts Bldg., Saint Paul 2, Minnesota.

FOR RENT—Physician's office northeast corner building University Avenue and Dale Street. Inquire 490 North Dale Street, Saint Paul, Minnesota.

WANTED—Young associate in busy general practice conducted in office and hospital. New modern clinic building, all new equipment. Full staff privileges available in fully approved hospital. Opportunity for partnership. Beginning salary, $750 a month. Address E-375, care Minnesota Medicine.

WANTED—A general practitioner for Fergus Falls State Hospital. Beginning salary $626.00 per month. Three bed room house available, partially furnished, subsistence, garage, Government working conditions, paid holidays, vacation, sick leave and retirement pension plan. Address inquiries to W. L. Patterson, M.D., Superintendent Fergus Falls State Hospital, Fergus Falls, Minnesota.

FOR SALE—Nose and Throat Examining Chair, oxidized copper, $15.00; Jones Diagnostic Scale with height measuring rod, $15.00; Electric Transformer Motor, changing indirect to direct current, $15.00; Electric Massage and Stand; Victor, Heavy 4-tubed Electric Centrifuge, covered, $15.00; Auto-clave, Gas, Copper. All in good condition. Address Dr. C. P. Robbins, 67 W. 6th, Winona, Minnesota.

WANTED—Physician for settled and growing community in Saint Paul. New building ready for occupancy September first. Share reception room with dentist. For appointment, call DE Soto 3766.

Ulmer
PHARMACAL COMPANY
1400 Harmon Place
Minneapolis 3, Minnesota

Send for our new brochure M-853a
P-B-SAL-C with ESOPRINE "ULMER"
Effective Arthritic Therapy

DOCTOR... *This is Your Hospital and Your School of Neuropsychiatric Nursing*

(By that we mean that not only have these institutions undertaken to constitute a haven of help for patients, but they form, in your interest a *remarkable facility for you professionally.)*

View of hospital, school, buildings and environs, 7 minutes from downtown Minneapolis

A COMPLETE NEURO-PSYCHIATRIC HOSPITAL

Up-to-date in all respects, new, functional buildings, set in spacious grounds, rehabilitation center, electroencephalography, therapies, laboratory. One of the largest neuro-psychiatric staffs in the United States. A voluntary, non-profit, non-sectarian institution of which this region may be proud.

SCHOOL FOR NEURO-PSYCHIATRIC NURSING

To offset the existing universal shortage of nurses, Glenwood Hills conducts a one-year course in neuropsychiatric nursing. You have observed the skill and attitudes of our graduates and trainees. Recruit one or two in behalf of your profession as a "contribution" stipulating that we send them back to you when trained. We will. Meanwhile tuition, room and board are free.

Glenwood Hills Neuro-psychiatric Hospital
School of Neuro-psychiatric Nursing

3901 Golden Valley Road, Minneapolis 22, Minnesota JUniper 2771

Helen Swenson Rascop, Director of Nurses

Dextri-Maltose
MEAD
Olac
MEAD
A High Protein Formula for Infants
MEAD JOHNSON & COMPANY • EVANSVILLE, INDIANA, U.S.A.
Lactum
LIQUID FORMULA FOR INFANTS
MEAD

Your choice of

3 basic infant formula products

all with an incomparable background

For almost half a century, Mead Johnson & Company's infant feeding products have had an incomparable background of clinical effectiveness and medical acceptance.

Babies fed Mead's formula products have been characterized by sturdy growth and low incidence of complications and feeding disturbances.

Dextri-Maltose
Mead's Carbohydrate Modifier
Olac
Mead's Powdered Formula
Lactum
Mead's Liquid Formula

MEAD

MEAD JOHNSON & COMPANY • EVANSVILLE 21, INDIANA, U.S.A.

Thrombin Topical

s. Fisher & Crane

. D. W. Smith

s. Gillis & Frazier

. Sturgis

. Bergen

s. Kavanaugh & Glass

THROMBIN TOPICAL acts directly on the blood fibrinogen to form a firm, adherent, *natural* clot, producing hemostasis in a matter of seconds. Whether you spray, flood or dust it onto affected surfaces, THROMBIN TOPICAL helps control capillary bleeding in abdominal surgery, brain and bone surgery, skin grafting, nose and throat operations, prostatic surgery, dental extraction, bleeding incident to drainage, excision or debridement, and many other operative procedures.

THROMBIN TOPICAL (bovine origin) is supplied in vials containing 5000 N.I.H. units each, with one 5-cc. vial of sterile isotonic saline diluent. Also available in a package containing three vials of THROMBIN TOPICAL (1000 N.I.H. units each) and one 6-cc. vial of diluent.

THROMBIN TOPICAL should never be injected. It is intended for topical use only.

MEDICAMENTA · VERA · PD & CO.

Parke, Davis & Company
DETROIT, MICHIGAN

DO YOU KNOW

It is only on a **Group Basis** that you can have Accident and Health Insurance with all these features.

1. Individual Policy cannot be terminated by Company
2. Renewable to age 70
3. Free of all objectionable exclusions
4. Low Cost
5. No increase in premium for advance in age
6. Pre-existing conditions covered
7. No requirement of House Confinement
8. World Wide Coverage

CASWELL-ROSS AGENCY

1177 N. W. Bank Building
Minneapolis 2, Minnesota
Minneapolis—MA 2585
St. Paul—PR 7004

Insurors to:

Minnesota State Bar Association
Minnesota State Dental Association
Minnesota State Medical Association
Minnesota Society of C. P. A.
Minnesota State Pharmaceutical Assn.
Minnesota Auto Dealers Association
Minnesota Federation of Eng. Societies
Minnesota State Veterinary Medical Soc.
Hennepin County Medical Society
Hennepin County Bar Association
11th Judicial Bar Association
Minneapolis Association of Life Underwriters
Ramsey County Medical Society
Ramsey County Bar Association
St. Paul District Dental Soc.
Minneapolis District Dental Soc.
St. Cloud Dental and Stearns County Medical Society
Duluth District Dental Society
East Central Medical Society
St. Louis County Medical Society
West Central Dist. Dental Society
Northwest Proprietors Association
St. Paul Life Underwriters, Inc.

Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 36 **September, 1953** **Number 9**

Contents

PROBLEMS IN THE ROENTGEN DIAGNOSIS OF BLEEDING LESIONS OF THE UPPER GASTROINTESTINAL TRACT.
Joseph C. Bell, M.D., Louisville, Kentucky........ 917

MASSIVE UPPER GASTROINTESTINAL HEMORRHAGE.
John M. Dorsey, M.D., Evanston, Illinois........ 921

THE PEPTIC ULCER PROBLEM.
Owen H. Wangensteen, M.D., Minneapolis, Minnesota 924

MALE STERILITY.
Harold J. Walder, M.D., Duluth, Minnesota..... 935

EVALUATION OF FEMALE STERILITY.
Louis L. Freidman, M.D., Saint Paul, Minnesota. 938

THE MINNESOTA MEDICAL PROFESSION AND TUBERCULOSIS.
J. Arthur Myers, M.D., Minneapolis, Minnesota.. 944

EXTRAPULMONARY INTRATHORACIC TUMORS.
Stuart W. Harrington, M.D., Rochester, Minnesota 953

LABORATORY AIDS TO MEDICAL PRACTICE:
Aspiration Biopsy of Bone Marrow: Its Diagnostic Value.
Gertrude L. Pease, M.D., Rochester, Minnesota.. 961

HISTORY OF MEDICINE IN MINNESOTA:
Medical History of The County of Yellow Medicine.
Mildred B. Lee, Granite Falls, Minnesota *(Continued from August issue)*........ 963

PRESIDENT'S LETTER:
Medical Allies........ 969

EDITORIAL:
The New Editor Speaks........ 970
Physicians' Assistance Fund........ 970
American Geriatrics Society........ 971
Blood Donation Still Needed........ 972
Doctor Keefer Appointed Special Assistant to Oveta Culp Hobby........ 972

MEDICAL ECONOMICS:
Commission Reports on Military Dependents' Care. 973
Public Debt Near Legal Limit........ 974
Construction Continues on Hill-Burton Hospitals. 975
Report Totals Federal Research Aid........ 975

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS:
License of Minneapolis Physician Suspended for Eighteen Months........ 975

THE DEAN'S PAGE:
Policies Relating to Admission of Medical Students 976

MINNESOTA STATE MEDICAL ASSOCIATION—House of Delegates—Summary of Proceedings, 1953...... 978

REPORTS AND ANNOUNCEMENTS........ 986
WOMAN'S AUXILIARY........ 991
IN MEMORIAM........ 992
OF GENERAL INTEREST........ 994
BOOK REVIEWS........1003

Contents of MINNESOTA MEDICINE copyrighted by Minnesota State Medical Association, 1953

Entered at the Post Office in Saint Paul as second class mail matter. Accepted for mailing at the special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 13, 1918.

MINNESOTA MEDICINE

OFFICIAL JOURNAL OF THE MINNESOTA STATE MEDICAL ASSOCIATION
Published by the Association under the direction of its Editing and Publishing Committee

Office of Minnesota State Medical Association,
496 Lowry Medical Arts Bldg., Saint Paul 2, Minnesota.

EDITING AND PUBLISHING COMMITTEE

E. M. HAMMES, Saint Paul
PHILIP F. DONOHUE, Saint Paul
L. M. EATON, Rochester
J. J. HEIMARK, Monterey
C. L. OPPEGAARD, Crookston
T. A. PEPPARD, Minneapolis
H. A. ROUST, Montevideo
O. W. ROWE, Duluth
HENRY L. ULRICH, Minneapolis
A. H. WELLS, Duluth

EDITORIAL STAFF

ARTHUR H. WELLS, Duluth, Editor
GEORGE EARL, Saint Paul, Associate Editor
HENRY L. ULRICH, Minneapolis, Associate Editor

BUSINESS MANAGER
R. R. ROSELL

Annual Subscription—$3.00. Single Copies—$0.40. Foreign and Canadian Subscriptions—$3.50.

The right is reserved to reject material submitted for editorial or advertising columns. The Editing and Publishing Committee does not hold itself responsible for views expressed either in editorials or other articles when signed by the author.

Classified advertising—ten cents a word; minimum charge, $2.00; key number, 25c additional. Remittance should accompany order.

Display advertising rates on request.

Address all communications concerning the journal to Minnesota Medicine, 2642 University Avenue, Saint Paul 14, Minnesota. Telephone Nestor 2641.

A MODERN PRIVATE SANITARIUM

for the Diagnosis, Care and Treatment of Nervous and Mental Disorders

MAIN BUILDING—One of 10 Units in "Cottage Plan"

ST. CROIXDALE ON LAKE ST. CROIX

PRESCOTT, WISCONSIN

Located on beautiful Lake St. Croix, 18 miles from the Twin Cities, it has the advantages of both City and Country. Every facility for treatment provided, including recreational activities and occupational-therapy under trained personnel. Close personal supervision given patients, and modern methods of therapy employed. Inspection and cooperation by reputable physicians invited. Rates very reasonable. Illustrated folder on request.

Prescott Office
Prescott, Wisconsin
Howard J. Laney, M.D.
Tel. 39 and Res., 76

Consulting Neuro-Psychiatrists
Hewitt B. Hannah, M.D., Andrew J. Leemhuis, M.D.
527 Medical Arts Bldg., Tel. MAin 1357, Minneapolis, Minn.

Superintendent
Ella M. Leseman
Prescott, Wisconsin
Tel. 69

Upjohn

less-antigenic penicillin:

Cer-O-Cillin

Trademark Reg. U. S. Pat. Off.

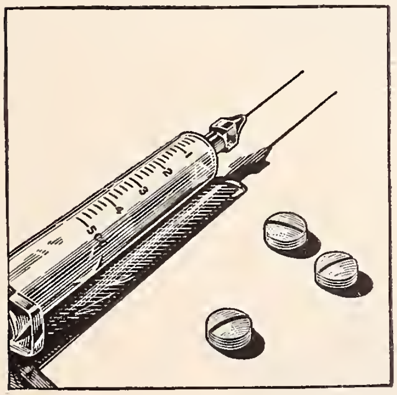
POTASSIUM

Available as:

Sterile vials containing 200,000 units Crystalline Penicillin O Potassium

Bottles of 12 buffered tablets, each containing 100,000 units Crystalline Penicillin O Potassium

The Upjohn Company, Kalamazoo, Michigan



Against STAPHylococci, STREPtococci and PNEUMOcocc

ALWAYS CONSIDER

RYTHROCIN*

a selective action antibiotic

ORALLY EFFECTIVE

against these coccal infections—especially indicated when patients are allergic to penicillin and other antibiotics or when the organism is resistant.

A DRUG OF CHOICE

against staphylococci—because of the high incidence of staphylococcal resistance to other antibiotics.

A DRUG OF CHOICE

because it does not materially alter normal intestinal flora; gastrointestinal disturbances rare; no serious side effects reported.

ADVANTAGEOUS

because the special acid-resistant coating developed by Abbott, and Abbott's built-in disintegrator, assure rapid dispersal and absorption in the upper intestinal tract.

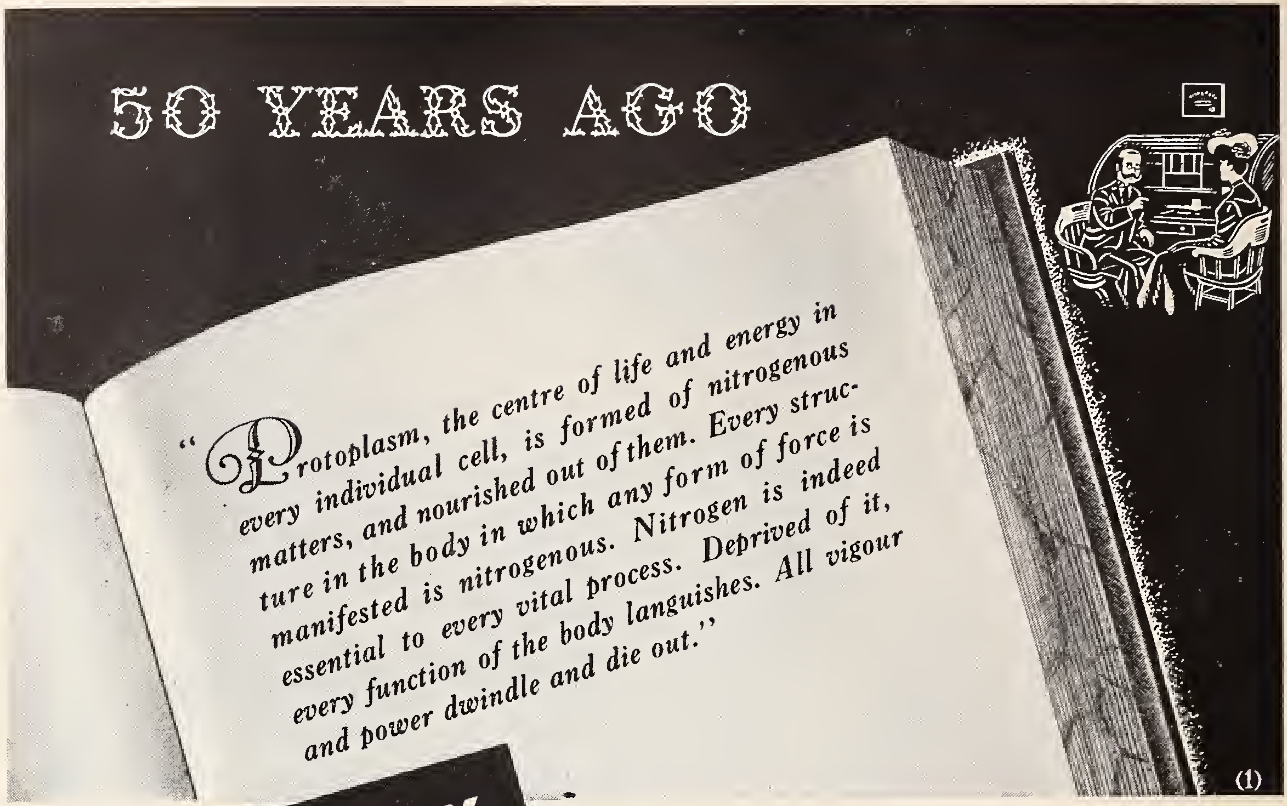
USE ERYTHROCIN

in pharyngitis, tonsillitis, scarlet fever, pneumonia, erysipelas, osteomyelitis, pyoderma and other indicated conditions.

Abbott

* Trade Mark
Erythromycin, Abbott
Crystalline

50 YEARS AGO



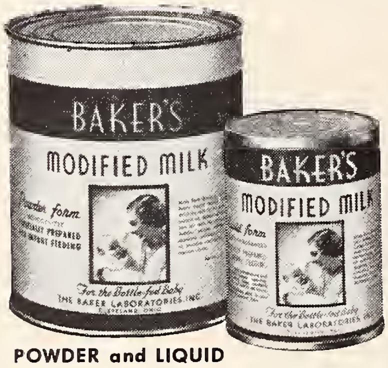
"Protoplasm, the centre of life and energy in every individual cell, is formed of nitrogenous matters, and nourished out of them. Every structure in the body in which any form of force is manifested is nitrogenous. Nitrogen is indeed essential to every vital process. Deprived of it, every function of the body languishes. All vigour and power dwindle and die out."

(1)

TODAY

Now as then, we know that proteins play a predominant role in nutrition . . . and Baker's Modified Milk provides an adequate protein intake (2) . . . 3.7 grams per kilogram of body weight per day.

Baker's also provides a replaced fat as well as adequate amounts of carbohydrates, vitamins (except C), calcium, phosphorus, iron and other minerals.



POWDER and LIQUID

Baker's Modified Milk is made from Grade A Milk (U. S. Public Health Service Milk Code), which has been modified by replacement of the milk fat with animal and vegetable oils and by the addition of carbohydrates, vitamins and iron.

BAKER'S MODIFIED MILK IS NUTRITIONALLY ADEQUATE FOR INFANTS

(1) Cheadle — *Artificial Feeding and Food Disorders of Infants*, Sixth Edition, (1906)
(2) National Research Council—*Recommended Dietary Allowances*, Reprint 129, (1949)

BAKER'S MODIFIED MILK
THE BAKER LABORATORIES INC.
Main Office: Cleveland, Ohio
Plant: East Troy, Wisconsin
Division Offices: Atlanta, Dallas, Denver,
Greensboro, N. C., Los Angeles, San Francisco, Seattle

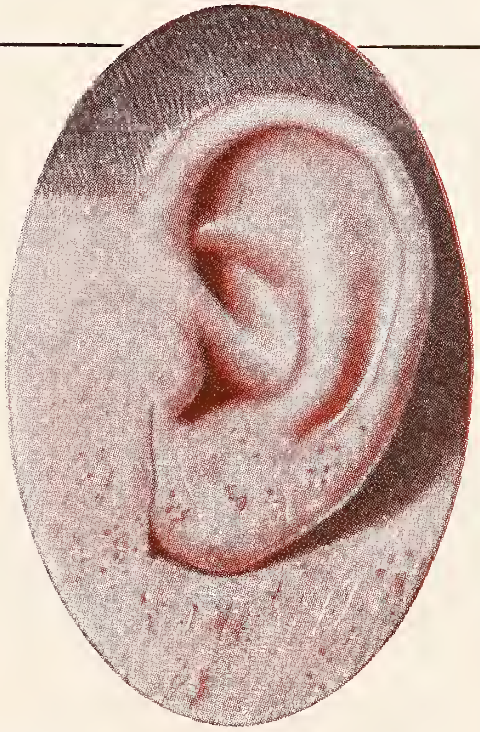
ACCEPTED
COUNCIL ON FOODS AND NUTRITION
AMERICAN MEDICAL ASSOCIATION

Topical Ointment of

HydroCortone®

ACETATE

(HYDROCORTISONE ACETATE, MERCK)



Relieves
Refractory
Allergic
Dermatoses

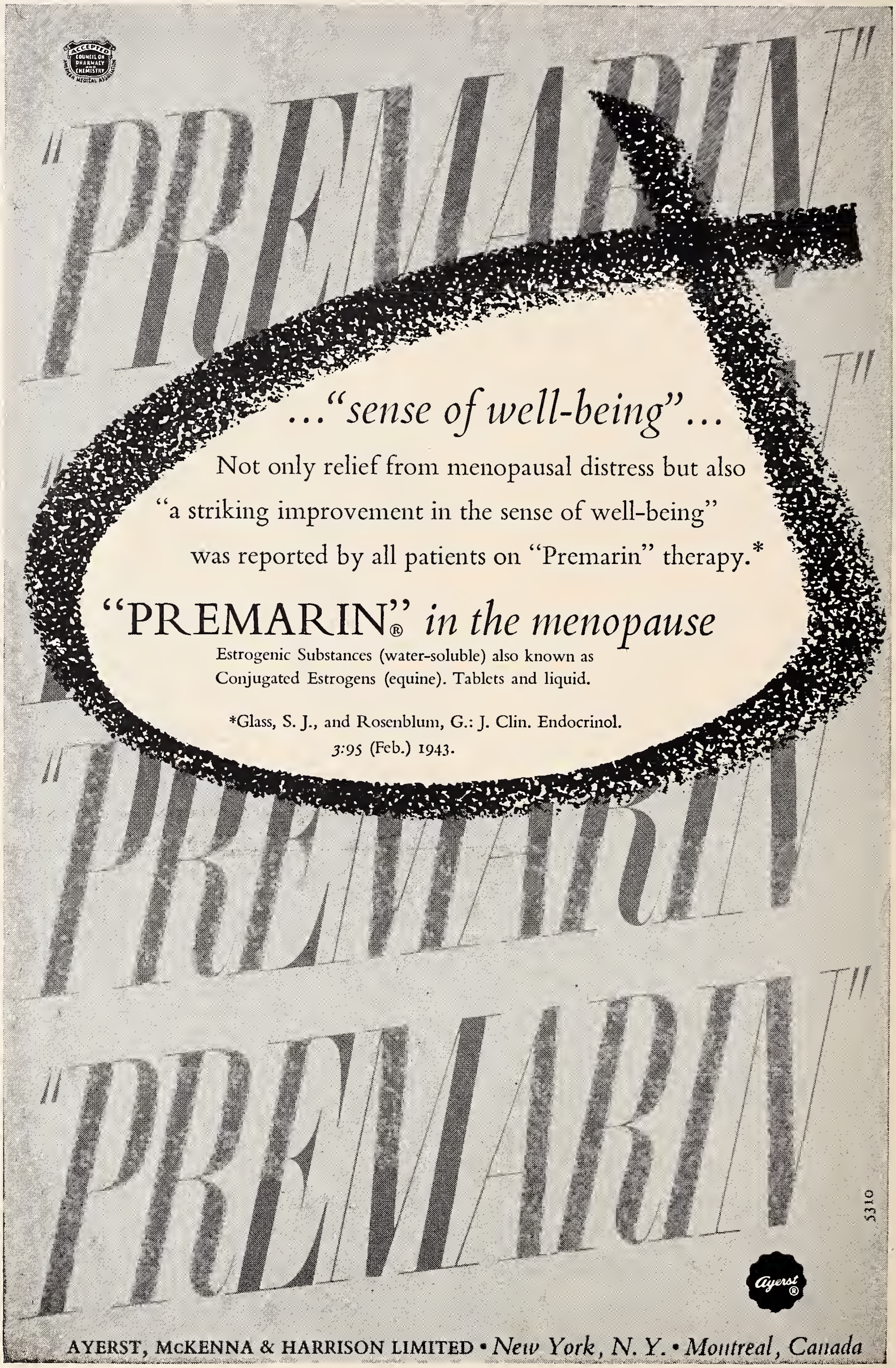
Topical Ointment of HYDROCORTONE Acetate —for dermatologic use—represents a new, superior therapy for allergic dermatoses, even in cases that previously proved refractory. This ointment affords prompt relief and rapid improvement in disorders such as contact dermatitis, atopic dermatitis, and nonspecific anogenital pruritus.

Literature on Request

HYDROCORTONE *is the registered trade-mark of Merck & Co., Inc. for its brand of hydrocortisone.*

MERCK & CO., INC.
Manufacturing Chemists
RAHWAY, NEW JERSEY

© Merck & Co., Inc.


ACCEPTED COUNCIL ON PHARMACY AND CHEMISTRY AMERICAN MEDICAL ASSOCIATION
"PREMARIN"
"PREMARIN"
"PREMARIN"
"PREMARIN"
5310
Ayerst ®

..."sense of well-being"...

Not only relief from menopausal distress but also "a striking improvement in the sense of well-being" was reported by all patients on "Premarin" therapy.*

"PREMARIN"® *in the menopause*

Estrogenic Substances (water-soluble) also known as
Conjugated Estrogens (equine). Tablets and liquid.

*Glass, S. J., and Rosenblum, G.: J. Clin. Endocrinol. 3:95 (Feb.) 1943.

AYERST, McKENNA & HARRISON LIMITED • *New York, N. Y.* • *Montreal, Canada*

Comfort in Hay Fever...

WINTHROP

NEO-SYNEPHRINE®
HYDROCHLORIDE

Neo-synephrine provides dependable nasal decongestion in hay fever, the common cold and sinusitis. One application usually gives relief for from two to four hours.

Well tolerated... Usually no congestive rebound... Undiminished effectiveness on repeated use... No appreciable interference with ciliary action.

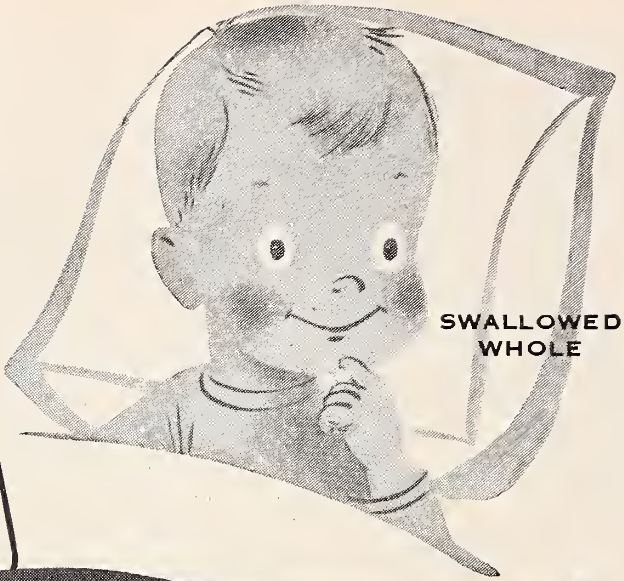
"... greatly appreciated by a patient in much need of rest and sleep..."

¼% solution (plain and aromatic)
½ and 1% solutions
½% water soluble jelly

ACCEPTED
COUNCIL ON PHARMACY AND CHEMISTRY
AMERICAN MEDICAL ASSOCIATION

Winthrop-Stearns INC.
NEW YORK 18, N. Y. WINDSOR, ONT.

Neo-Synephrine, trademark reg. U.S. Pat. Off., brand of phenylephrine



SWALLOWED
WHOLE

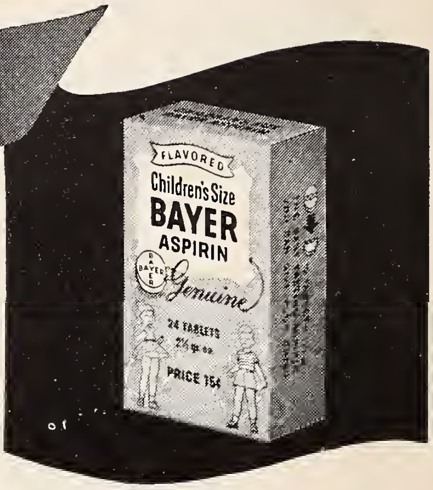
NEW

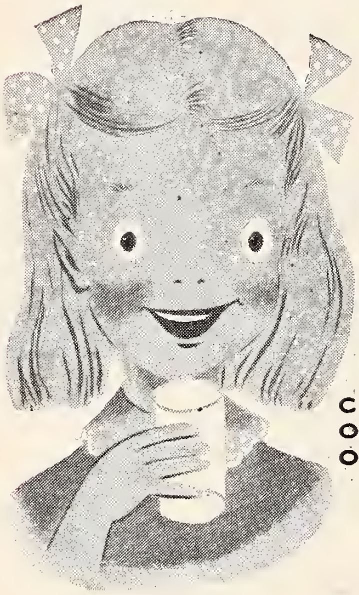
FLAVORED

CHILDREN'S SIZE

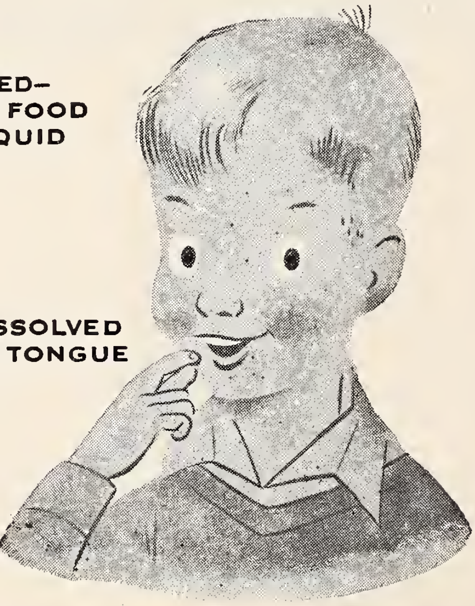
BAYER

ASPIRIN


FLAVORED
Children's Size
BAYER
ASPIRIN
BAYER
Genuine
24 TABLETS
2½ gr. ea.
PRICE 15¢



CHEWED—
OR IN FOOD
OR LIQUID



DISSOLVED
ON TONGUE

- The Best Tasting Aspirin You Can Prescribe.
- The Flavor Remains Stable Down to the Last Tablet in the Bottle.
- 24 Tablet Bottle . . . 2½ gr. each 15¢

2½ gr. ⇨ 1¼ gr.

Grooved Tablets—
Easily Halved.

We will be pleased to send samples on request

THE BAYER COMPANY DIVISION of Sterling Drug Inc., 1450 Broadway, New York 18, N. Y

12
ELECTION

speaking of allergy, let's get down to cases

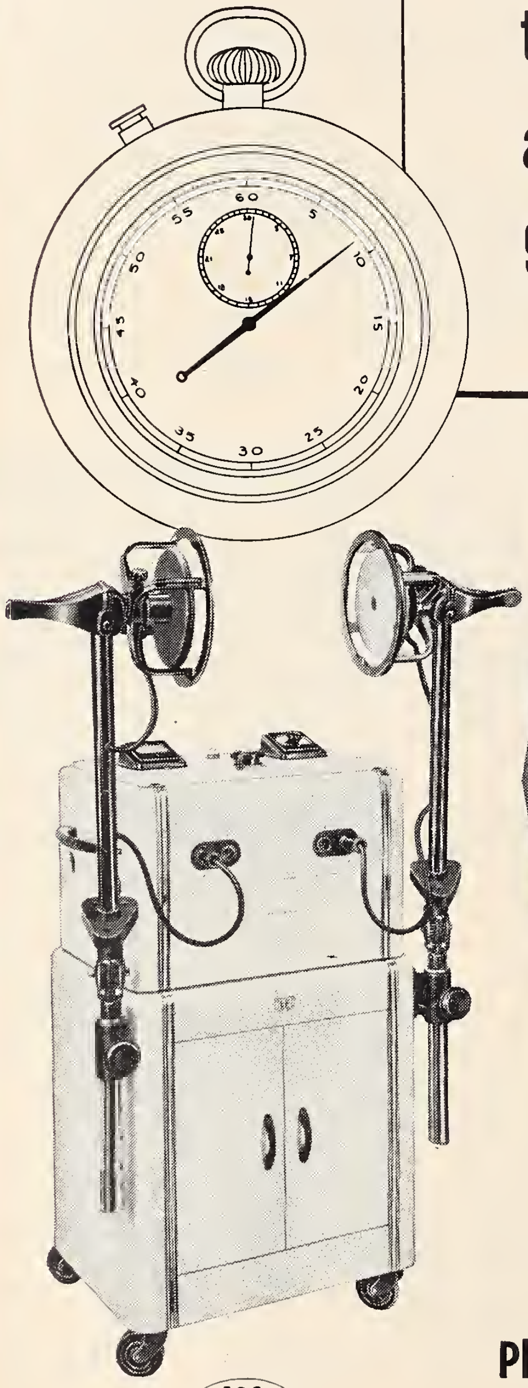
The documented record — more than 900 reports — shows literally thousands of allergic patients relieved of symptoms by Pyribenzamine. Relief has been prompt and prolonged, with extremely low incidence of sedation or other side reactions.

On the basis of published evidence, no other antihistamine combines greater clinical benefit with greater freedom from side effects. *Supplied:* Pyribenzamine hydrochloride (tripelennamine hydrochloride Ciba) 50 mg. (scored) tablets, bottles of 100 and 1000.

Pyribenzamine®

2/1911M

Ciba



can **YOU** make effective diathermy treatment applications in 9 seconds or less?

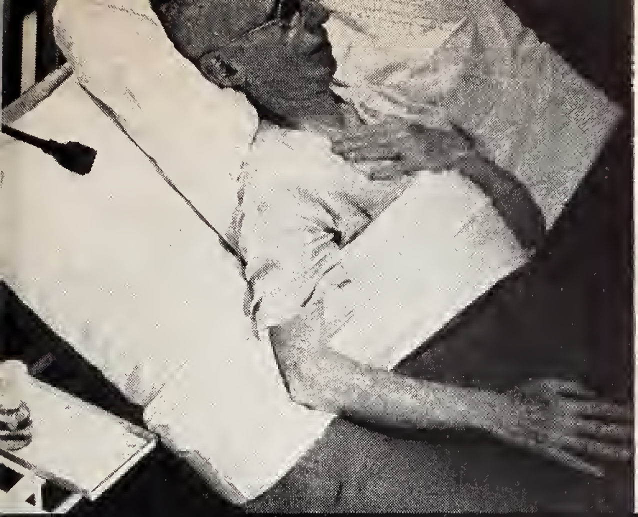
L·F

You *can* with the Liebel-Flarsheim SW-660 diathermy! The ingeniously designed unit, the versatile applicators and the adjustable counterbalanced arms all contribute to faster set-ups and more efficient treatment. Why not write us for all the facts today?

☐ send LFSWD
literature M-953

Physicians and Hospitals Supply Co., Inc.
1400 Harmon Place, Minneapolis 3, Minn.

FCC
TYPE APPROVAL
No. D-539



Terramycin®

BRAND OF OXYTETRACYCLINE

an agent of choice in urinary tract infections

- ***promptly effective against a broad-spectrum of urinary pathogens***
- ***high concentration in active form in urinary tract***
- ***well tolerated, even upon prolonged administration***

Terramycin
is acclaimed
by urologists everywhere
for unsurpassed action in

chronic urinary tract infections

acute urinary tract infections

urinary tract surgery

"The resistant cases showed remarkable response."[1]
". . . has cured where all other antibiotics have failed."[2]

"Patients with pyelitis were well and doing their usual duties within 24 hours . . ."[3]

"Morbidity from apparent genito-urinary causes was noted in only one patient of 44 patients who received prophylactic Terramycin."[3]

"Terramycin is generally well tolerated, the percentage of relapses being low and the percentage of bacteriological as well as clinical cures high."[2]

1. Ferguson, C., and Miller, C. D.: J. Urol. *67*:762 (May) 1952.
2. Trafton, H. M., and Lind, H. E.: Ibid. *69*:315 (Feb.) 1953.
3. Blahey, P. R.: Canad. M. A. J. *66*:151 (Feb.) 1952.

Pfizer

PFIZER LABORATORIES BROOKLYN 6, N. Y.
DIVISION, CHAS. PFIZER & CO., INC.

NOTICE TO MEMBERS

A NEW 1953 EDITION OF
YOUR SILENT PARTNER PROGRAM
FOR THE MEDICAL PROFESSION

PROVIDING

- ★ **Life Time Benefits for Both Sickness and Accidents!**
- ★ **Benefits from First Day Minimum Claim 7 Days!**
- ★ **Does Not Terminate at Any Age!**
- ★ **Pays Non-Confining Sickness 5 Years!**
- ★ **Life Income for Specific Dismembership!**

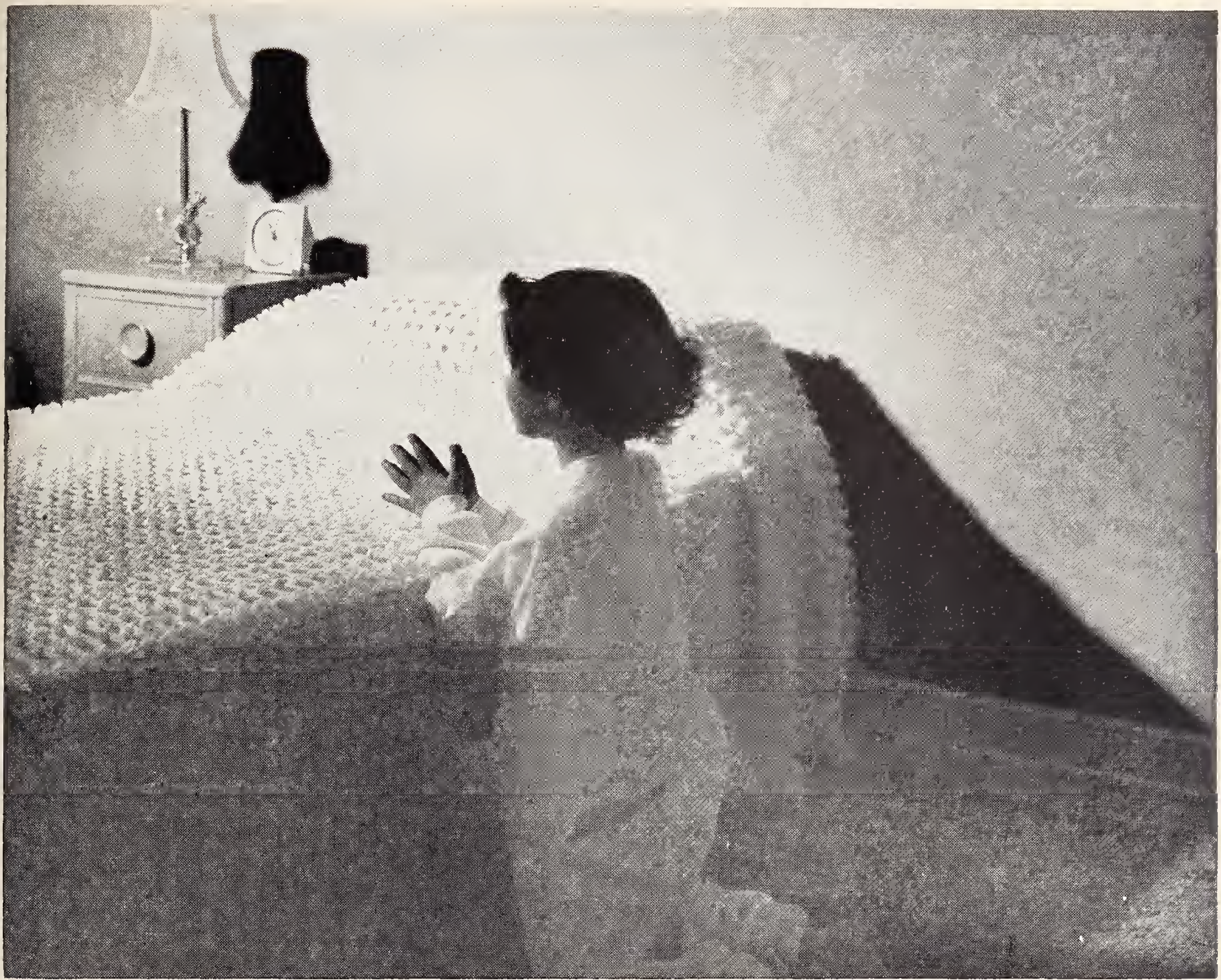
Write for Personal Information

to

"Silent Partner" Professional Plans

CONTINENTAL CASUALTY COMPANY

30 East Adams Street, Chicago 3, Illinois



". . . and please get people to pay what they owe Daddy. Mommy says that's why he's so cross."

Are you burdened by a heap of uncollected accounts? The Professional Credit Protective Bureau can really help you.

The Professional Credit Protective Bureau is collecting thousands of past due accounts in the professional field.

The Professional Credit Protective Bureau is a credit control organization that sees that the patient pays direct to the supplier of services. In other words you PAY THE COLLECTION ORGANIZATION AFTER YOUR PATIENT HAS PAID YOU and neither you nor the debtor is embarrassed.

Ninety-two leading trade associations . . . including many medical and dental organizations . . . are recommending this credit control system as part of their service to members.

It will pay you to investigate this tried and true system. Use the attached coupon.

Professional Credit Protective Bureau
724 Metropolitan Bldg., Dept. MM 9-53
Minneapolis 1, Minn.

Please send me full details on the operation of your collection service.

Name ....

Address ....

City .... State ....

Division of

The I.C. System

724 Metropolitan Bldg.
Minneapolis 1, Minn.

Meat...

and the Diet after 50

Although caloric needs in the later decades of life lessen with decreasing physical activity and diminishing metabolic rate, clinical observations[1] corroborated by experimental studies[2] show that protein needs of the aging organism continue at the levels of adequacy in earlier years.[3] For avoidance of protein deficiencies, which the aged are prone to develop,[4] the protein quota of the diet of persons over fifty should be more liberal than is often the practice.[5] In providing this quota, lean meat may well be one of the protein foods of the daily diet.

In the years beyond fifty, as well as before, continuous adequate protein nutrition remains an absolute necessity for maintenance of a normal concentration of plasma proteins and, in turn, a normal osmotic pressure of the plasma.[6] Even more pronounced in the aged than in younger persons are the ill consequences of hypoproteinemia—edema, decreased resistance to generalized infection, retarded bone healing, and poor wound healing.[7] Furthermore, dietary protein is essential for the continuous chemical regeneration of cell protein in the prevention of abnormal tissue wasting, one of the most characteristic and obvious changes in the geriatric patient.[8]

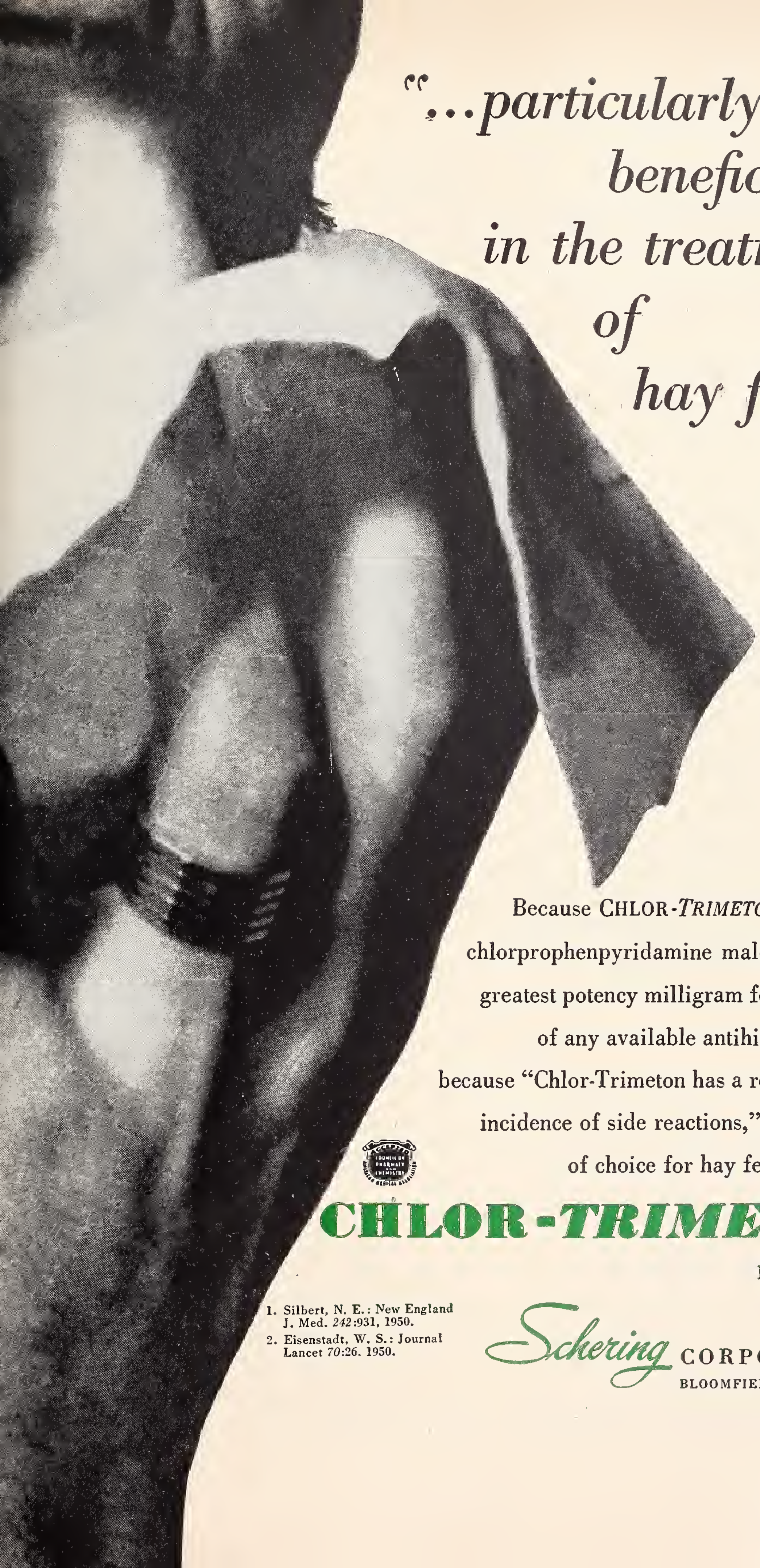
But meat is much more than an outstanding protective protein food in the dietary of persons over fifty. It also supplies generous amounts of the B group of vitamins and of iron, phosphorus, and other essential minerals. In the well-balanced diet of the later years of life, meat is just as important for the maintenance of nutritional and physiologic well-being as it is during the earlier years of life.

REFERENCES

1. Freeman, J. T.: Basic Factors of Nutrition in Old Age, Geriatrics *2*:41 (Jan.-Feb.) 1947.
2. Sherman, H. C.: Chemistry of Food and Nutrition, ed. 8, New York, The Macmillan Company, 1952, p. 208.
3. Tuohy, E. L.: Feeding the Aged, J.A.M.A. *121*:42 (Jan. 2) 1943.
4. Ohlson, M. A.; Roberts, P. H.; Joseph, S. A., and Nelson, P. M.: Dietary Practices of One Hundred Women from Forty to Seventy-Five Years of Age, J. Am. Dietet. A. *24*:286 (Apr.) 1948.
5. McLester, J. S., and Darby, W. J.: Nutrition and Diet in Health and Disease, ed. 6., Philadelphia, W. B. Saunders Company, 1952, p. 222.
6. Madden, S. C., and Whipple, G. H.: Amino Acids in the Production of Plasma Protein and Nitrogen Balance, Am. J. M. Sc. *211*:149 (Feb.) 1946.
7. Fishback, F. C.: Surgery in the Aged, Clinics *4*:1250 (Feb.) 1946. Zintel, H. A.: The Role of Nutrition in Preoperative and Postoperative Care, Am. J. M. Sc. *207*:204 (Feb.) 1944.
8. Kirk, J. E.: Nutrition and Aging, Nutrition Rev. 9:321 (Nov.) 1951.

The Seal of Acceptance denotes that the nutritional statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

American Meat Institute
Main Office, Chicago...Members Throughout the United States



"...particularly beneficial in the treatment of hay fever."[1]

Because CHLOR-*TRIMETON*® maleate, chlorprophenpyridamine maleate, has the greatest potency milligram for milligram of any available antihistamine, and because "Chlor-Trimeton has a relatively low incidence of side reactions,"[2] it is a drug of choice for hay fever patients.

CHLOR-*TRIMETON*

maleate

1. Silbert, N. E.: New England J. Med. *242*:931, 1950.
2. Eisenstadt, W. S.: Journal Lancet *70*:26. 1950.

Schering CORPORATION
BLOOMFIELD, NEW JERSEY

CHLOR-TRIMETON

SCHERING

a most effective antibiotic for the common bacterial infections of childhood

For infections in children
caused by staphylococci,
streptococci, or both . . .
the palatability,
low allergenicity,
and relative freedom
from gastro-intestinal upsets
make 'Ilotycin,' Pediatric,
a prescription favorite.
Youngsters (with an
occasional incorrigible exception)
take it without a struggle.
"Tablet-shy" oldsters
like it, too.

taste-tested
well tolerated
clinically effective

Lilly

THE ORIGINATOR OF ERYTHROMYCIN

ILOTYCIN
ETHYL CARBONATE
(ERYTHROMYCIN ETHYL CARBONATE, LILLY)
PEDIATRIC

Formula:

Each 5 cc. (approximately one teaspoonful) contain 100 mg. 'Ilotycin' as the ethyl carbonate.

Dosage:

15 pounds—1/2 teaspoonful every six hours
30 pounds—1 teaspoonful every six hours
60 pounds—2 teaspoonfuls every six hours

How Supplied:

Each package consists of one bottle containing 1.2 Gm. 'Ilotycin' as the ethyl carbonate in a dry, pleasantly flavored mixture: 45 cc. of water are added at the time of dispensing to provide 60 cc. of an oral suspension. After mixing, the suspension is stable for two weeks at room temperature.

Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 36 September, 1953 Number 9

PROBLEMS IN THE ROENTGEN DIAGNOSIS OF BLEEDING LESIONS OF THE UPPER GASTROINTESTINAL TRACT

JOSEPH C. BELL, M.D.
Louisville, Kentucky

YOUR speaker is honored in being invited by the Minnesota State Medical Association to present the annual Russel D. Carman Memorial Lecture during this Centennial Meeting of the Association. Russel D. Carman contributed much to medical progress during his lifetime and in the field of Gastrointestinal Diagnostic Radiology no American has contributed more and few, if any, as much.

The first edition of a text entitled *The Roentgen Diagnosis of Diseases of the Alimentary Canal,* prepared jointly by Carman and Albert Miller was published by W. B. Saunders Company of Philadelphia in 1917. It was an immediate success and the second edition followed in 1920, Carman then being the sole author. This book sets a high standard for medical writing. It is filled with information, words of wisdom, is beautifully illustrated and even today, more than thirty years since publication, is still a modern text, one that all those doing roentgen examinations of the gastrointestinal tract should know intimately.

In the first chapter of the second edition appears this statement regarding essential apparatus.

> "It is true that in this, as in many other things, the man counts for more than the machine, and the bulk of roentgenologic knowledge has been gained by those who had to content themselves with crude appliances."

This truth is especially pertinent today for radiologic machines become progressively more complicated and in at least some institutions those in administrative positions at times fail to appreciate that a well-trained, experienced, conscientious physician is the key to accurate diagnosis and adequate therapy, the machine being only a necessary adjunct.

Since the method of roentgen examination of the gastrointestinal tract is of cardinal importance, Carman's views as set forth in the following quotations should be of interest. He writes:

> "I believed that the advantages of the screen in the examination of the digestive tract can hardly be too strongly emphasized. Only by its use can exact information be obtained as to mobility and flexibility, the phenomena of peristalsis and antiperistalsis, the nature and permanence of irregularities of contour, and the effects of palpation, respiratory movement and varying positions."

As to "plates" now replaced by films, this is said:

> "After the examiner has acquired some proficiency with the screen, he will occasionally be inclined to dispense with plates, especially in the apparently normal case in which the patient is thin, the screen image sharp, and the clinical history negligible. But it is never wholly safe to do this. . . . Plates show minute deformities which cannot always be detected on the screen, may be studied at leisure and may be filed for future reference."

Carman then makes the following very important statement:

> "In published discussions of gastric roentgenology it is occasionally intimated that the screen and plate are rivals. This is a misapprehension. Rather should they be considered as indispensable complements to each

---

The Russell D. Carman Memorial Lecture read in the Symposium on Gastrointestinal Disease at the Centennial Meeting of the Minnesota State Medical Association, Saint Paul, Minnesota, May 18, 1953.

other in every complete examination. I have always used both methods, and would fear to discard either. Cases are frequently met with in which sometimes one, sometimes the other, alone elicits the information sought."

In the chapter entitled "Interpretation" the following appear:

"The roentgenologic examination of the digestive tract is not a mysterious art requiring extraordinary talents. Neither is it a simple diagnostic method which can be learned in a day. Its successful employment demands industry, experience, judgment and care, just as any other procedure in medicine—no more, but no less.

"The maintenance of a conservative attitude in this work is especially necessary, and, at the same time, especially difficult. The veteran roentgenologist, as well as the novice, is tempted to see too much rather than too little. Once the observer has acquired some familiarity with his work he will find that direct signs of lesions will be manifest quickly or not at all.

"Failure to discover a lesion by the roentgen-ray is often pardonable, but the subjection of a patient to needless operation on trivial roentgen evidence alone, is not readily forgiven by those concerned. Common sense has been defined as the ability to distinguish the important from the unimportant, and in this meaning every diagnostician has an abiding need of common sense.

"There are two very practical checks against error which the examiner may employ, namely, re-examination and the giving of antispasmodics in cases in which spasm is suspected. In all doubtful cases one or both of these tests should be applied."

He ends the chapter by the following:

"To sum up, the essentials for satisfactory roentgen diagnosis are faithfulness to an orderly routine, careful observation, the use of antispasmodics and re-examination in doubtful cases, cautious interpretation, and last, but not least, a willingness to admit whenever it is true, that the findings are inconclusive.

Concerning the "Normal Stomach" Carman writes:

"It is rather trite to say that a knowledge of normal conditions as revealed by the roentgen ray is essential to a proper understanding of abnormal conditions. Yet this general truth applies so accurately and specifically to roentgenology of the stomach that its reiteration is never amiss."

Knowing the normal is an essential and one of the most difficult requirements in accurate diagnosis, for if the normal is known, the abnormal will promptly be recognized even though the exact nature of the lesion may not readily be apparent.

Carman's discussion of Gastric Cancer is a masterpiece, containing detailed case histories and operative and microscopic findings in various forms of gastric cancer, some typical and some very atypical in their manifestations. The illustrations are seldom excelled even today although most of the films were made with crude equipment of low capacity using gas tubes and glass plates.

The above quotations were selected from the wealth of invaluable material in Carman's text for they have a direct bearing on the problem under consideration here this afternoon, "Problems in the Roentgen Diagnosis of Bleeding Lesions of the Upper Gastrointestinal Tract."

Methods of Roentgen Examination

Your speaker believes as did Carman that no one method of examination is the answer to accurate diagnosis. He considers that the wise radiologist should avail himself of all well-established means of investigation, which include a pertinent although brief history, palpation, detailed roentgenoscopy and indicated films, usually including so-called spot films and serial films. Likewise he will stimulate wider use of esophagoscopy and gastroscopy when these are indicated.

Gastroscopy is quite widely available today and is of decided value particularly in the diagnosis of gastritis, some ulcers, and certain gastric tumors.

Serial radiography, particularly of the stomach and duodenum advocated by Lewis Gregory Cole of New York, is mentioned by Carman in the second edition of his book. This method of examination, in one of the various modifications, is used by many radiologists. It has the virtue of recording intrinsic movements, irregularities in contour and density, and of showing certain structures particularly the duodenum both filled with contrast material and almost empty when the mucosal relief is demonstrated. In the hands of the writer the serial film is considered the single most valuable method of roentgenography although it is used only in conjunction with other essential films and is always preceded by painstaking and detailed roentgenoscopy.

Compression technique, commonly spoken of as "spot film" technique, early advocated by Berg and Akerlund in Europe and later introduced into this country by Geyman, is now widely employed and when varying degrees of compression are indicated for the demonstration of certain lesions, it may be invaluable. A part of the apparatus for the above type of examination is the so-called quick change over switch making possible the instantaneous change from the roentgenoscopic to the roentgenographic setting of the machine and the securing of any predetermined exposure. With this apparatus the examiner immediately can record on an x-ray film anything seen roentgenoscopically.

In 1937 Hampton[4] introduced what he considered to be a safe method for the examination of patients with actively bleeding duodenal ulcers. This method is now generally accepted. He employs a heavy mixture consisting of four ounces by volume of plain barium sulphate and one teaspoonful of plain petrolagar suspended in three ounces by volume of water. The entire examination is done with the patient horizontal without palpation or compression. It has proven to be of great value in demonstrating ulcer craters in the posterior wall of the middle and distal one-thirds of the first portion of the duodenum, ones where there may be little deformity of the cap but which frequently hemorrhage most severely.

In Hampton's method, after the heavy barium suspension has entered the stomach, the patient is gently rotated to the right almost into the true lateral. The duodenum is given time to fill and a film is then made centering over the first portion. Ulcers of the anterior and posterior walls are frequently well shown in profile in this way. The patient is next rotated to the left until the gas from the fundus of the stomach passes into the distal part of the stomach and the duodenum resulting in a double contrast visualization of the mucosa lining these structures. A film is then exposed after which Hampton secures any other indicated films employed in a conventional examination that can be made with the patient horizontal. Localized compression and palpation are avoided throughout the examination.

Your speaker has made use of this form of examination since it was first described by Hampton and the first two projections, those made in right and left posteroanterior oblique projections, are routinely employed in all examinations of the stomach and duodenum.

General Considerations

In 1933 Allen and Benedict[1] studied the duodenal ulcers seen in the Massachusetts General Hospital during the previous twenty years. In 20 per cent of the cases bleeding was severe and in almost all fatal cases the ulcers were in the posterior wall of the duodenum with erosion into the pancreas and into a large vessel. In the fatal cases the average age was 56.3 years, although in those that recovered the average was 41.8. They found death from hemorrhage rare under fifty years of age.

Stanley O. Hoer[5] of the Cleveland Clinic Foundation in discussing "Management of Bleeding from the Upper Gastrointestinal Tract," reported that the hemorrhage arose from a peptic ulcer in 75 per cent of their cases, the ulcers being duodenal in 63 per cent, gastric in 8 per cent and marginal in 4 per cent. Hemorrhage was secondary to gastritis in 9 per cent, to esophageal varices in 7 per cent, to gastric neoplasms in 3 per cent and in 6 per cent it was from other sources, among which unquestionably were a very few hiatus hernias. In a few the source was never demonstrated.

The incidence of bleeding from the upper gastrointestinal tract and the mortality from hemorrhage vary somewhat between hospital patients and all those suffering from this malady, for those severly affected are more likely to enter hospitals. In our experience with nonhospitalized patients, in a significant number who had no history of any previous upper gastrointestinal disorder, no cause for bleeding could be discovered even with repeated examinations.

Not too many years ago the surgical treatment of bleeding lesions of the upper gastrointestinal tract was not to be considered, and transfusion was rarely employed. Today, however, with the liberal use of blood, improved methods of anesthesia and more accurate diagnosis, especially in those past fifty with severe hemorrhage, and in those with a history of recurrent or continuing hemorrhage, surgery is becoming the treatment of choice.

All agree that a determination of the site and nature of the bleeding lesion, when at all possible, is essential and it is here that the roentgen examination is of great importance, the examiner assuming a major responsibility in determining the method of treatment indicated.

The history, as so often is true, may be of utmost importance often indicating the probable site and nature of the lesion. Now that ACTH and cortisone have come into such widespread use in the treatment of many diseases, the history of such medication becomes of significance for Gray and associates,[2] Halstead[3] and others have shown that these substances may cause acute peptic ulcers in individuals who previously have had no findings indicative of ulceration. Ulcers previously healed may become active and hemorrhage and/or perforate. Severe gastritis at times followed by bleeding may develop.

Using the method introduced by Hampton, the upper gastrointestinal tract, even during active hemorrhage, can be examined with safety. Esophageal varices, if present, and if at all well developed, usually will be diagnosed. Hiatus hernias, gastric ulcers, marginal ulcers, gastric neoplasms and duodenal ulcers will be detected in a high percentage of cases. All agree that ulcers of the duodenum that hemorrhage severely most frequently are in the posterior wall, may present few, if any, roentgen signs unless the actual crater is visualized and that they usually are distal to the more common sites of ulcers in which hemorrhage is not a major factor. It is essential, however, that the entire duodenum be examined, for ulcers of the second or descending portion are not uncommon and may hemorrhage, and new growths, although uncommon, may occur in any portion.

Bleeding lesions of the small bowel distal to the duodenum are uncommon but they do occur. Hemorrhage rarely is severe but may be protracted. When suspected, a small bowel study is indicated.

When hemorrhage is slow or at the earliest opportunity after it ceases, it is essential that every effort be made to discover the lesion causing the disability. If hemorrhage has stopped only a very short time before beginning the examination, great care must be exercised, and if palpation and compression are employed, they must be performed with the greatest gentleness.

If surgical intervention is under consideration, it is essential that bleeding from esophageal varices be ruled out, for a laparotomy in such instances would be useless and dangerous.

Comment

In bleeding from the upper gastrointestinal tract, the radiologist is an important member of the team charged with the safety of the patient. He assumes a major responsibility but with industry, painstaking care, and the exercise of a high degree of common sense, as defined by Carman, he will be equal to the task before him.

References

1. Allen, A. W., and Benedict, E. B.: Acute massive hemorrhage from duodenal ulcer. Ann. Surg., 98: 736-749, 1933.
2. Gray, S. J.; Benson, J. A., Jr.; Spiro, H. M., and Reifenstein, R. W.: Effects of ACTH and cortisone upon stomach: its significance in the normal and in peptic ulcer. Gastroenterology, 19:658-673, 1951.
3. Halsted, James, A.: The effects of ACTH and cortisone in diseases of the digestive system. Philadelphia: W. B. Saunders Co., 1952; Med. Clin. No. Am., 1952.
4. Hampton, A. O.: Safe method for roentgen demonstration of bleeding duodenal ulcer. Am. J. Roentgenol., 38:565-570, 1937.
5. Hoerr, Stanley O.: Management of bleeding from the upper gastrointestinal tract. New England J. Med., 248:404-408 (Mar.) 1953.

BONE MARROW CULTURE HELPFUL IN DIAGNOSIS OF HISTOPLASMOSIS

Routine bone marrow culture for Histoplasma capsulatum, believed to be of little value in adults, was reported to be of considerable diagnostic help in infants and children. This was concluded by Rohn and Bond† of the Indiana University Medical Center in a study of 76 patients admitted as hematologic diagnostic problems and subjected to bone marrow cultures.

Histoplasmosis was found in five cases, a positive yield of 6.5 per cent. In two of the five patients harboring H. capsulatum, the organism was observed on microscopic examination of the marrow, and cultures were of only confirmatory value. In the remaining three children, however, bone marrow culture was the single test which established the diagnosis.

In any infant or child suffering from unexplained fever, lymphadenopathy, splenomegaly, hepatomegaly or unexplained pulmonary findings with or without an abnormal peripheral blood picture, Rohn and Bond suggest the routine culture of the bone marrow for H. capsulatum.

---

†Rohn, R. J., and Bond, W. H.: Blood, 8:329 (April) 1953.

MASSIVE UPPER GASTROINTESTINAL HEMORRHAGE

JOHN M. DORSEY, M.D.
Evanston, Illinois

WE ARE especially indebted to Welch[3] and Stewart[1] for their published reports on the results of treatment of patients with massive hemorrhage from the upper gastrointestinal tract. Analysis of the data presented by them provides definitions of their concept of what constitutes massive hemorrhage, through the employment of certain clinical measurements. According to Stewart they are: (1) that the patient has shown gross evidence of bleeding into the upper gastrointestinal tract within one week; (2) the total circulating red cell mass was reduced to less than 60 per cent of normal, and (3) there was reasonably good clinical evidence for the diagnosis of bleeding peptic ulcer. According to Welch they are: (1) the occurrence of acute hemorrhage accompanied by variable signs of shock; (2) the loss of approximately 50 per cent of the red cells, that is, the red cell count has fallen to 2.5 million or below; (3) the photohemoglobin determination has been below 7 grams, and (4) over 2,500 cc. of whole blood has been required to restore the hemoglobin level to normal.

Once defined it is interesting to note from their experience what has been the source of the bleeding.

It is apparent that there are three general approaches to the treatment of this most important symptom.

Conservative Medical Management Alone.—This no doubt evolved because in the earliest years surgery was not available and when later it was employed it was attended by a mortality much higher than that which accompanied the straight medical regime. Turnbull[2] and his associates have presented the results in patients so treated at the Evanston Hospital in the years between 1928-1937 and 1938-1947. Their mortality was 2.5 per cent. The excellence of this result has made the acceptance of indications for more active intervention reluctant, to say the least. If their success can be rationalized it must be pointed out that the economic status of their patients allowed for more rigid attention to ulcer management, and more careful follow-up medical care. Unwittingly too late surgical intervention in patients obviously not responding to medical management might have been considered as surgical mortality.

TABLE I. SERIES OF CONSECUTIVE CASES OF ACUTELY BLEEDING UPPER GASTROINTESTINAL LESIONS PRODUCING MORE THAN 40 PER CENT EXSANGUINATION WHEN OPERATED UPON*

	Number	Deaths
Peptic ulcer	110	12
Acute gastritis	1	0
Cirrhosis, esophageal varices	2	0
Extra-hepatic portal block	1	0
No disease found	1	0
Gastric carcinoma	5	1
Gastric lymphosarcoma	2	0
Pancreatic carcinoma	2	1
Total	124	14

*From Stewart

TABLE II. SOURCE OF BLEEDING IN CASES OF ACUTE MASSIVE HEMORRHAGE OF THE UPPER PART OF THE GASTROINTESTINAL TRACT OBSERVED AT THE MASSACHUSETTS GENERAL HOSPITAL, 1938-1947*

	No. of Cases	Per cent of Total	No. of Deaths	Per cent of Mortality
Ulcer, duodenal	210	59	24	11
Ulcer, gastric	41	11	9	22
Ulcer, jejunal	8	2	1	13
Portal hypertension	62	17	41	66
Gastritis	20	5	2	10
Tumors	8	2	7	88
Diaphragmatic hernia	4	1	3	75
Cirsoid aneurysm	2	1	1	50
Hemophilia	1	—	1	100
Undetermined	8	2	3	38
Total	363		92	25

*From Welch

It is difficult to sustain the cause of unqualified conservative medical management in light of the obvious improvement in surgical results as reported by Stewart (Table II). He arbitrarily, according to definition, selected from the patients having upper gastrointestinal hemorrhage presumably due to ulcer those whose hemorrhage qualified as being massive. He per-

---

From the Northwestern University Medical School and the Evanston Hospital.

Read in the Symposium on Gastrointestinal Disease at the Centennial Meeting of the Minnesota State Medical Convention, Saint Paul, Minnesota, May 18, 1953.

TABLE III. CONSECUTIVE OPERATIONS FOR ACUTELY BLEEDING PEPTIC ULCER IN PATIENTS SHOWING MORE THAN 40 PER CENT EXSANGUINATION*

	Number	Deaths
Gastric resection (80%) duodenal ulcer	50	2
Gastrict resection (80%) gastric ulcer	43	6
Gastric resection (80%) gastric and duodenal ulcer	4	2
Gastric resection; excision pyloric mucosa	4	0
Gastrict resection; excision of gastro-jejunostomy	3	1
Resection of stomach, jejunum, transverse colon	1	1
Total gastrectomy	2	0
Total gastrectomy after gastric resection	1	0
Exploratory laparotomy	2	0
	110	12

*From Stewart

TABLE IV. OPERATIVE MORTALITY IN CASES OF MASSIVE HEMORRHAGE DUE TO GASTRODUODENAL ULCER AT MASSACHUSETTS GENERAL HOSPITAL, 1938-1947*

	Total Cases	No. of Deaths	Per cent Mortality
Emergency operations			
within 48 hours of onset	13	2	15
over 48 hours, but after early recurrence	19	1	5
after repeated recurrences	13	7	54
Interval operations	68	1	2
	113	11	10

*From Welch

formed gastric resection with the outcome as indicated in Table III—a very impressive figure.

It is logical that approach No. 3 as reported by Welch, the results of which have been shown in Table IV, might combine the advantages of Nos. 1 and 2, and more adequately satisfy the contentions of the proponents of each of these methods.

Patients bleeding from the upper gastrointestinal tract were admitted to the surgical service for joint watching by both surgeon and internist. Those who continued to bleed or had recurrent hemorrhage, massive in character, were subjected to planned gastric resection under conditions conducive to optimum surgical technique. Those whose hemorrhage ceased were after a definitely established time returned to the medical service and advised to have interim gastric resection. It was felt that the mortality, not to mention morbidity or economic loss, was less under such a plan. Those not operated were known to have recurrent hemorrhage. The mortality in that group exceeded that in the group in which interim gastric resection was performed.

Upon what significant beliefs should the management of acute massive upper gastrointestinal hemorrhage be predicated?

1. Indiscriminate emergency surgery should be condemned.

2. Discriminate intervention carries the least risk during the first twenty-four to thirty-six hours.

3. Despite the impressive reduction in the medical mortality due to improved management, a certain percentage of patients will continue to die of uncontrollable hemorrhage:
   (a) Below the age of forty there has been a reported 2 per cent death rate but this has been achieved by an 8 per cent surgical intervention.
   (b) Over the age of fifty there has been a reported mortality of 23 per cent.

4. The reported mortality of massive hemorrhage from gastric ulcer (22 per cent) is higher than from duodenal ulcer (10 per cent):
   (a) A patient over fifty bleeding from a chronic gastric ulcer is the most likely to die of uncontrollable hemorrhage.

5. Continued or recurrent bleeding is of utmost importance as a *prognostic factor:*
   (a) Seventy per cent of hemorrhages even in older age groups cease spontaneously on hospitalization.
   (b) Since 2,500 cc. of blood is lost in a single massive hemorrhage, if five pints of blood replacement does not produce stabilization, then bleeding is continuing.
   (c) The majority of patients (85 per cent) who bleed again do so within a short time within the third hospital day.
   (d) The mortality of persistent or recurrent hemorrhage in the age group over fifty may be as high as 56 per cent.

6. Unrelievable pain differing from previous ulcer distress often with back radiation preceding hemorrhage or persisting after hemorrhage is a serious symptom for massive bleeding.

7. Pyloric stenosis predisposes to recurrent hemorrhage.

8. Massive hemorrhage in the presence of previous perforation is of significance.

9. Massive hemorrhage in relation to previous bleeding:
   (a) Sixty-four per cent of patients have not bled previously—mortality 12 per cent.
   (b) Twenty per cent have bled before—mortality 16 per cent.

(c) In the remaining 16 per cent—mortality 7 per cent.

10. Transfusion therapy is not without risk because:

(a) Despite vigilance the suddenness of hemorrhage may produce recurrent shock, hypoxia, and associated phenomena.

(b) There has been reported the occasional occurrence of a hemorrhagic tendency.

(c) Incompatibilities are evidenced at times because of the urgency of the need.

(d) Delayed effects such as hepatitis are almost inevitable, though infrequent.

(e) Transfusions in great numbers are more of an economic burden than surgical intervention.

What is the management of acute massive upper gastrointestinal bleeding?

Because the patient will no doubt exhibit evidence of shock, combative measures are instituted at once with but the most cursory physical examination. Nothing is allowed by mouth except moistening of the lips. Blood replacement is begun as soon as typing and cross matching can be performed. The blood count including smears searching for evidence of blood dyscrasias, hematocrit, blood volume, prothrombin, non-protein nitrogen, and chloride determinations are proceeded with. Blood tests for liver function are included. Half hourly blood pressure determinations help guide blood replacement endeavoring to sustain the pressure at 100 mm. of Hg and the pulse at 120 or less.

With restorative measures under way a more careful history and physical examination is recommended. Evidences of liver disease such as spider angiomas, hepatic and splenic enlargements, altered albumin-globulin ratio, depleted prothrombin or excessive dye retention are suggestive of the presence of bleeding esophageal varices. Their management would constitute a separate discussion. Laparotomy is to be avoided, however.

In the absence of a history suggestive of peptic ulcer in a patient with uncontrollable bleeding in whom surgical intervention is contemplated, x-ray examination of the esophagus, stomach and duodenum is advisable. With the patient in the recumbent position barium may be administered. Turning the patient from side to side without using pressure on the abdomen will lead to the establishment of evidence of ulcer in a high percentage of patients.

If no evidence of esophageal varices are found, a soft nasal tube is introduced into the stomach and gentle suction applied to remove clots and hydrochloric acid. Nausea is inhibited and digestion prevented.

Morphine should be used with caution as should barbiturates in the elderly. Demerol may be employed for restlessness.

Vitamin C, Vitamin K, and fluid requirements can be administered parenterally.

When surgery is indicated on a basis of the foregoing considerations, it should be done under conditions allowing for optimum performance—a rested surgical team, experienced nursing and anesthetic personnel, and with optimum blood replacement accomplished and additional blood available.

An upper mid-line abdominal incision immediately establishes the appearance of the liver as substantiating the absence of evidence of cirrhosis. The stomach may be full of blood clots. These should be evacuated by gastrotomy. If these are not present, immediate gastrotomy should be performed. The presence of blood once established, the stomach may be advantageously transected. Bleeding from the free edges is controlled by Allis forceps. First the lower segment is inspected, mobilizing the duodenum by dividing its lateral peritoneal attachment if necessary. The lower segment may be split anteriorly for adequate exposure if necessary. Similarly the upper segment may be inspected. All steps taken should be with the object of a 75 per cent or 80 per cent gastric resection in mind once it has been established that there is no evidence of liver disease and that the stomach contains gross blood. Even though no source is apparent the resection is advisable. Superficial ulceration or bleeding vessels covered by mucosal folds may be easily overlooked. Resection with ligation of the blood supply will control the hemorrhage from these sources.

With gross bleeding arrested—blood replacement will manifest its restorative effect. Shock, hypoxia and their attendant changes can be re-

(Continued on Page 943)

THE PEPTIC ULCER PROBLEM

OWEN H. WANGENSTEEN, M.D.
Minneapolis, Minnesota

The Centennial

It is a rare privilege to have the opportunity of participating in this Centennial Celebration of the Minnesota State Medical Association. At its meeting places over the past century, the physicians of the State of Minnesota have congregated annually since a point nearer in time, to the beginnings of Anesthesia (1846) than to the first publications by Lister (1867) upon the application of the antiseptic principle in surgery. Through the years, as now, members of the Society and distinguished visitors have tried to bring to these sessions of the Society an up-to-date critical appraisal of the practical aspects of current problems. And in these gatherings, through the bond of a common interest, acquaintanceships have been renewed, confidences have been exchanged and friendships cemented. The Association has also been the spokesman for the Profession in its contacts with the Public, whom it has been our pleasure to serve.

Within the space of two years, Minnesota has observed the Centenary of its Statehood and the Centennial marking the beginnings of our University. On an occasion such as this, when with filial piety we ponder the achievements of our forebears in a spirit of grateful thanksgiving, and look hopefully toward the future, let us not forget the interdependence of State, School and our Association. The hopes and aspirations of each are indelibly linked to the training and promise of our youth—an asset transcending in value all the natural resources of our great State. As we renew and pledge again today the faith of our Fathers, let us rededicate ourselves to their labors of making Minnesota truly American—the great land of unlimited opportunity for anyone, who like every good physician, serves his fellowmen, forgetful of self, in a spirit of humility with tender care and devotion.

Peptic Ulcer—Still an Important Problem

PEPTIC ULCER is still a challenging problem. We know that the origins of peptic ulcer are traceable primarily to an abundant secretion of gastric juice with a high digestive power, owing to its content of hydrochloric acid and pepsin. However, many persons who have very responsive stomachs, capable of secreting large amounts of acid gastric juice, do not have peptic ulcer. Moreover, a number of conditions, which fail to augment gastric secretion, nevertheless, abet the ulcer diathesis and lower the threshold to ulcer production. Anemia of the mucosa of those segments of the digestive tract which may come in contact with gastric juice increases the ease of ulcer production. Lillehei, Dixon, and the writer (1948) found that bleeding a dog with maintenance of the blood pressure below 70 mm. Hg for half an hour—the withdrawn citrated blood being then returned—is followed regularly by far greater ease of ulcer production.[6] In fact, any change which affects the normal homeostatic pattern of the mucosa of segments of the alimentary tract which may come in contact with the acid-peptic juice appears to lower the threshold to ulcer production. Fatigue, cold and anoxia appear to be strong abettors of the ulcer diathesis. Adrenergic stimuli, which give rise to vessel spasm, and consequently to anemia of the mucosae over which acid-peptic juice may ply, abet the ulcer diathesis.[11] Employment of histamine-in-beeswax has proved a very useful tool in these explorations.

A surprise finding in these studies has been the great sensitivity of the esophageal mucosa to injury by acid-peptic[4] juice. In fact, it would be quite safe to suggest that all squamous epithelium is far more susceptible to digestive injury by acid-peptic juice than is columnar epithelium protected in part by mucous secreting glands.

Location of Ulcer

The most frequent site for peptic ulcer appears to be the duodenum. The next most frequent

---

Dr. Wangensteen is Chief, Department of Surgery, University of Minnesota Medical School, Minneapolis, Minnesota.

Read in the Symposium on Gastrointestinal Disease at the Centennial Meeting of the Minnesota State Medical Society, Saint Paul, Minnesota, May 18, 1953.

This paper is based upon researches supported by the following sources:

1. United States Public Health Service Grant RG1028 (C5).
2. Augustus L. Searle Fund for Surgical Research.
3. Austen S. Cargill Fund.
4. Jay and Rose Phillips Fund.
5. Mr. and Mrs. R. C. Lilly Fund.

location is the stomach. Observations in this Clinic, relating to the reflux of gastric juice into the esophagus, suggest quite definitely that manifestations of acid-peptic disease in the esophagus are more common than is generally believed. In 1949, the relief of so-called "idiopathic stricture" of the esophagus was reported from this Clinic in patients, following a conventional three-quarter gastric resection.[19] Shortly thereafter, experiments in the laboratory on dogs and cats, in which the esophagus was perfused with gastric juice obtained from isolated canine gastric pouches, showed how very sensitive esophageal mucosa is to injury by acid-peptic juice. In fact, as a logical sequence of these clinical and experimental observations, this writer feels that so-called "idiopathic" stricture of the esophagus as well as "spontaneous perforation" of the esophagus in man are, in all likelihood, manifestations of acid-peptic digestion of the esophagus.[17]

The only other areas in which peptic ulcers are observed are in the jejunum following the establishment of gastro-jejunal stomas, or spontaneously in a Meckel's diverticulum.

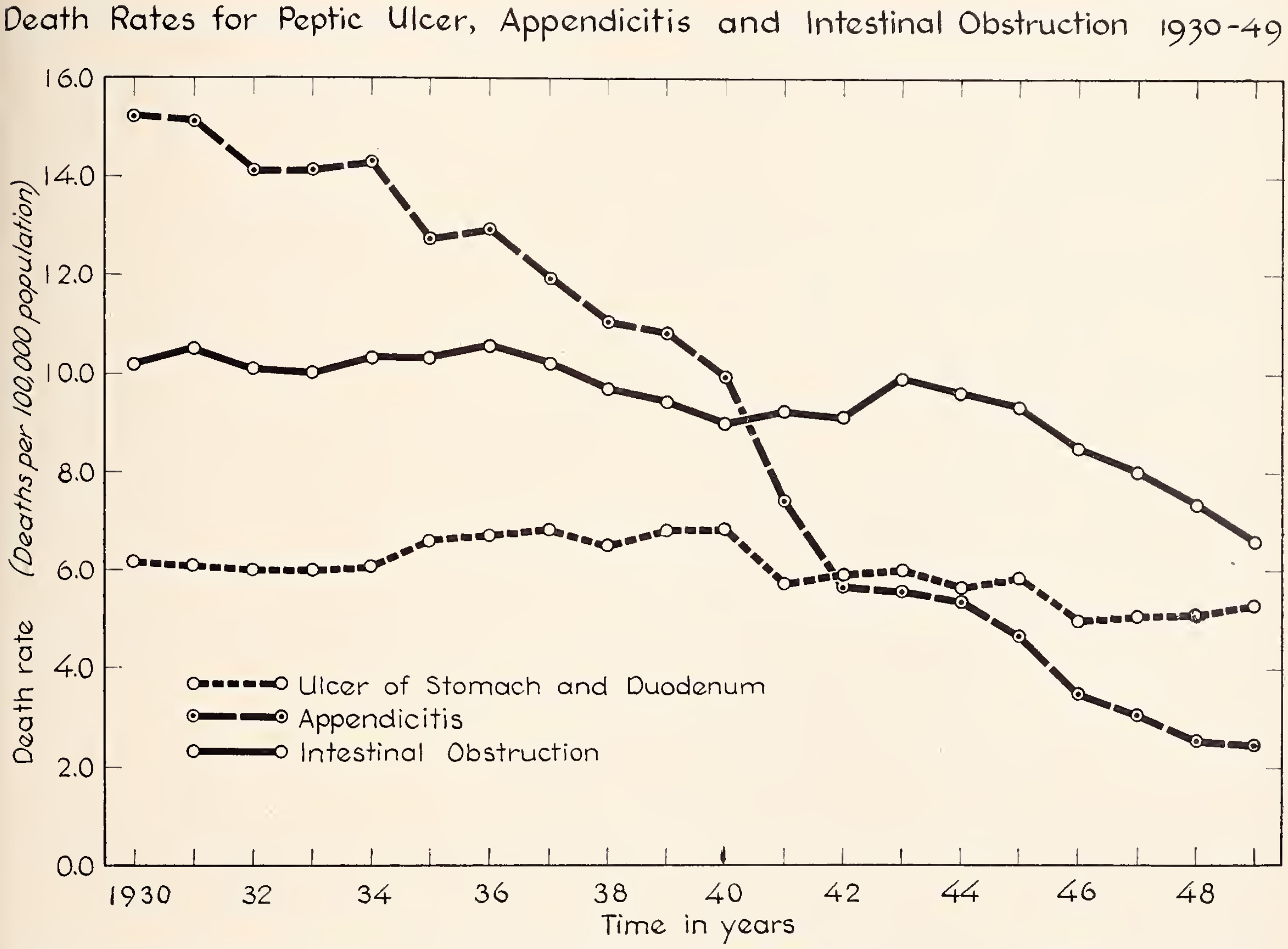


Fig. 1. There has been only a 10 per cent decrease in the mortality of peptic ulcer as shown by the Vital Statistics of the United States over a period of many decades.

Meanwhile, however, there has been a continuing reduction in the mortality of appendicitis. In fact, the present annual mortality of appendicitis is only 15 per cent of what it was twenty years ago.

During the past decade, the mortality of bowel obstruction has declined steadily, the present mortality being 65 per cent of what it was a decade ago.

Defense of the Designation "Peptic Ulcer"

Dragstedt[2] (1936) once made the suggestion that the correct designation for ulcers resulting from digestion by gastric juice should be "acid-ulcer." The great sensitivity of the esophageal mucosa to injury by acid-peptic juice consitiutes a good test of the validity of retaining the designation, peptic. Whereas the esophageal mucosa does show distinctive effects of injury when subjected to perfusion with hydrochloric acid of pH_1, by contrast, when gastric juice, obtained from an isolated dog's pouch of the same acidity, is used, unmistakable evidences of far greater digestive action upon the perfused esophagus are observed, owing to the presence of pepsin. Perforations of the esophagus were never observed when the

TABLE I. 1949 MORTALITY
(DEATH RATES PER 100,000 POPULATION)*

	United States	West North Central Area States	Minnesota
1. Ulcer of Stomach & Duodenum (540, 541)	5.3	5.1	4.4
2. Appendicitis (550-553)	2.5	2.7	1.9
3. Hernia, Intestinal Obstruction (560, 561, 570)	6.6	7.2	5.8

*Vital statistics, 1949.

It is apparent that Minnesota's accomplishment is slightly better than in the Nation and in our own area of States.

esophagus was perfused with hydrochloric acid. Employment of gastric juice of the same pH was followed by perforations quite readily.

The Resistance of Gastric Mucosa to Injury By Acid-Peptic Juice

Since the day of John Hunter, the question has frequently been asked: "Why does not the stomach digest itself?" It is still a good question. It is well known that the great secretory capacity of mucous secreting glands in the tubules of the stomach cannot be exhausted. In this function, undoubtedly, resides a good deal of the native resistance of the gastric mucosa against injury by acid-peptic juice. And, inasmuch as gastric ulcer is frequently observed in the absence of distinctly high values for gastric acid, it would appear that there are other abetting factors which lower the threshold of the gastric mucosa to injury by acid-peptic juice. Gastric ulcers should be studied with reference to the content of mucus in the gastric tubules adjacent to the ulcer. Possibly there may be some defect in the protective action with which the gastric mucosa ordinarily is so richly endowed, in patients who develop gastric ulcer.

It is known that in the presence of pyloric obstruction, ulcers may be observed in the stomach. Since Pavlov made this observation long years ago, anyone who has worked with isolated canine gastric pouches in the laboratory has had occasion to observe that obstruction to outflow of the gastric juice may be accompanied by the development of an ulcer within the pouch. Moreover, vagotomy which reduces gastric acidity may be followed by gastric ulcer in man and in experimental animals because of gastric retention attending the gastric atony of vagotomy. It should be said however, that of all the mucosae which come in contact with acid-peptic juice, the gastric mucosa appears to be the most resistant to injury by the gastric juice. If this were not so, presumably everyone would have a gastric ulcer.

Duodenal ulcers occur with predilection just beyond the pyloric outlet. The pH of the duodenal content beyond the common opening of the bile duct and the pancreatic duct of Wirsung is such that the pH of the ejected content from the stomach is raised quickly by the admixture with bile and pancreatic juice to a level at which it loses its peptic activity.

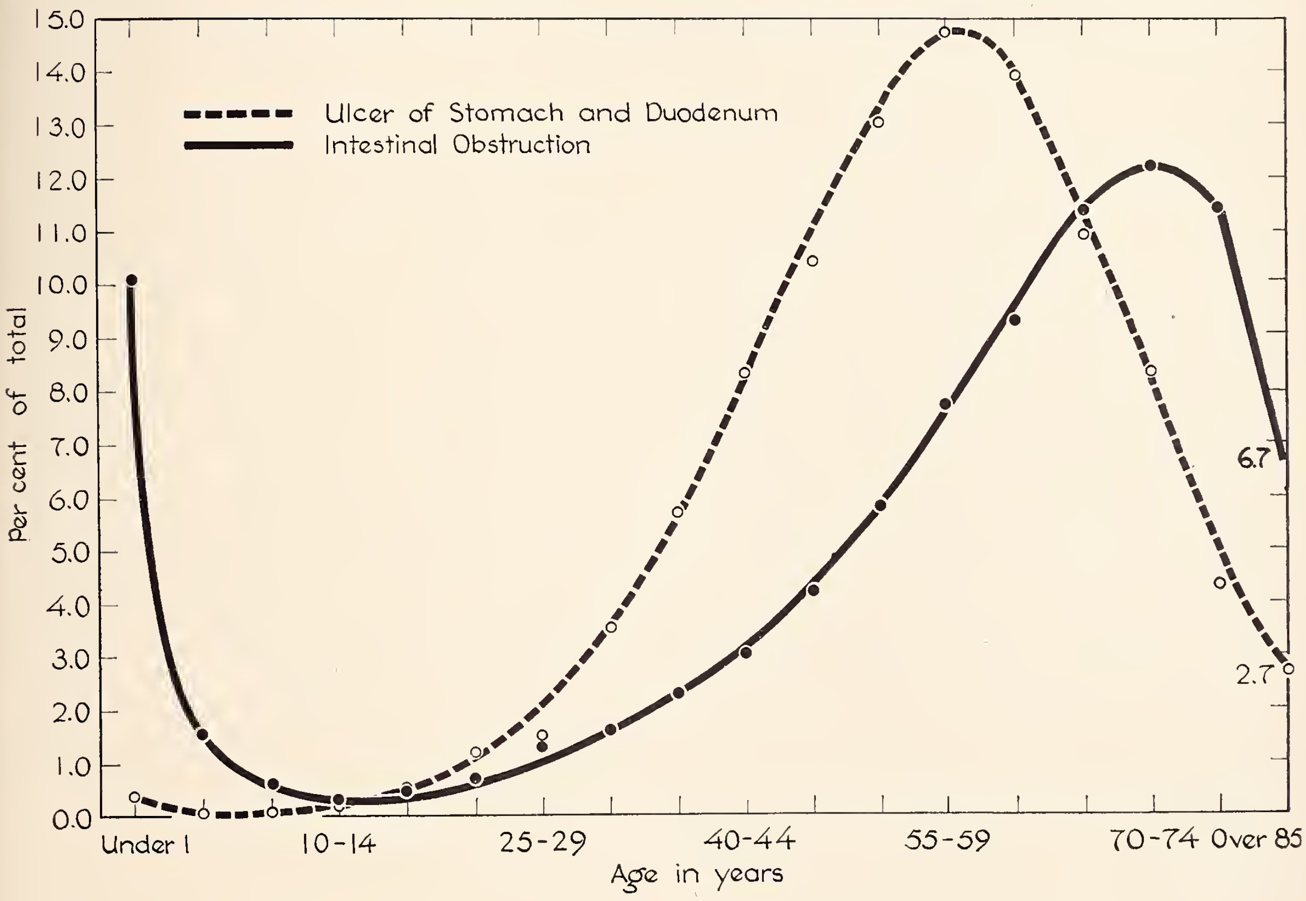
Special Considerations

Mortality.—Whereas there have been sharp declines in the mortality of acute appendicitis during the past twenty years, and a less striking decline in the mortality of acute intestinal obstruction during the past decade, there has been only an appreciable reduction (10 per cent) in the mortality of peptic ulcer as revealed by the Vital Statistics[11] of the United States over the past twenty years. It is gratifying to note that the accomplishment in Minnesota in all these acute disorders is slightly better than in our own geographic tier of states as well as in the country as a whole (Table I).

Perforation.—During the past ten years, throughout the country, a great reduction in the mortality due to perforation of an ulcer has taken place. A decade ago, hospital mortalities for perforated ulcer ran in the area of 20 to 25 per cent. Today, those mortalities are quite generally under 10 per cent. In fact, no mortality has been observed attending the closure of perforated peptic ulcers in this Clinic during the past five years.

There has been a renewal of interest in recent years in the conservative management of perforation with an indwelling duodenal tube, a method which this writer described[12] in 1935. That report mentioned four patients with acute perforation with pneumoperitoneum treated by suction. One of these patients, with a very large pneumoperitoneum and a perforation of twenty-eight hours, died. There were four additional patients with a "forme fruste" type of perforation without a demonstrable pneumoperitoneum, all of whom recovered. No antibiotics were then available, and following the death of the patient with the large pneumoperitoneum, the conservative management of acute perforation of peptic ulcer was abandoned. Despite the recent flurry of interest in the conservative management of perforated ulcer in England and in this country, operative closure continues to be the method of choice in this Clinic.

Mortality from Intestinal Obstruction *grand total 9,854;* Peptic Ulcer *grand total 7,809;* in the United States Census of 1949



Percent of total deaths in 5 year periods

Fig. 2. The mortality of duodenal ulcer and bowel obstruction, at various ages of life. It is to be noted that 75 per cent of the mortality of peptic ulcer occurs essentially between the ages of forty and seventy. Moreover, between the ages of fifty and seventy, the mortality of peptic ulcer is reminiscent of the large mortality from appendicitis of two decades ago.

On the contrary, the mortality of bowel obstruction is largest in the first few years of life, and again towards the end of life. This circumstance is readily apparent in that, during the first year of life particularly, such difficult and hazardous obstructions as meconium ileus, intestinal atresia, and volvulus neonatorum are encountered. Toward the end of life, the physcal infirmities of man and cancer of the colon are the important items in the large mortalities observed.

Obstruction.—Obstruction occurs usually as a sequel of a duodenal or a pyloric ulcer. Obstruction which fails to relent with the ingestion or intragastric dripping of skim milk suggests that an ulcer crater is present. Repeated episodes of obstruction lead to duodenual narrowing. Obstruction, like perforation, usually brings the patient to the surgeon.

Hemorrhage.—The large threat to life today for the patient who has a peptic ulcer is the hazard of hemorrhage. The continuing mortality of peptic ulcer is almost entirely owing to this circumstance. With very few exceptions, instances of massive hemorrhage from whatever cause has become the object of concern of surgeons. Peptic ulcer appears to be such an exception. This situation is in need of re-adjustment. Inasmuch as effective means of dealing with peptic ulcer are generally available, it would appear that patients who have had episodes of hemorrhage should not be held off from the protective influence of an operation indefinitely. The immediate risk to life can be reduced by earlier resort to operation, which will stop the bleeding. At the same time, protection will be afforded against recurrent hemorrhage in that a satisfactory operation thwarts the ulcer diathesis in an effective and lasting manner.

Reference to Figure 2 reveals that the large mortality from peptic ulcer occurs between the ages of forty and seventy. Between the ages of fifty and seventy the mortality of peptic ulcer today is as great as it was from appendicitis in this country twenty years ago. This situation obviously needs study and correction.

Patients coming to the hospital with active hemorrhage because of peptic ulcer should become the primary responsibility of the surgeon. He should decide whether operation is necessary. This decision should no longer be the responsibility of the internist. If hemorrhage has been brisk and bleeding to shock levels of blood pressure (80 mm. of Hg. or less) has occurred, immediate operation is in order. If there has been hemorrhage without bleeding to shock level, the dripping of skim milk through an inlying gastric tube, the milk being dripped over twenty-four-hour periods, may make operation unnecessary. Of all substrates with which this Clinic has had some experience in combating the hemorrhage of ulcer, it is my impression that the dripping of skim milk is easily the best agent. However, in patients who have had more than one hemorrhage, granted the patient is in satisfactory condition, no advantage would appear to be gained through the agency of delay. The unfortunate thing is that protracted, conservative treatment of active hemorrhage, provides a patient who is probably a far poorer risk for operation than he was when he first presented himself at the hospital for the relief of hemorrhage. It is not easy to correct the lag phases in the adjustment of vital processes attending any serious insult, such as hemorrhage. The harm occasioned by the delay is not undone by the simple expedient of blood replacement. The time-loss factor is an item of great importance and must come to be recognized as such. Lost opportunity cannot be retrieved readily.

Hematemesis Without Obvious Evidence of Peptic Ulcer at Operation

In 1945, in patients in whom hematemesis had been observed and bleeding was still active but no ulcer found at operation, the writer advised performing the conventional three-quarter gastric resection.[14] At the time of the report, four such cases were cited. In all save one, a small erosion was found high on the lesser curvature. In the remaining patient, diffuse ulceration of the mucosa was found microscopically. Recurrent hemorrhage has not been observed in any of these patients. In the meanwhile, many additional such patients have been subjected to gastric resections with gratifying results. Moreover, the suggestion of performing gastric resection in patients who have had hematemesis but in whom no ulcer can be found at operation, has been adopted by others.[1]

In such patients, it has become regular practice to measure the portal venous pressure at operation to make certain that one is not dealing with the item of portal hypertension. It has become evident too that, in the bleeding of portal hypertension, excision of the entire acid-secreting area of the stomach is mandatory, an anastomosis being made between the distal end of the esophagus and the antrum of the stomach.[15,17] It is becoming more generally accepted now that the bleeding from esophageal varices is essentially an acid-peptic linked phenomenon. Moreover, it is probably safe to suggest that *hematemesis* is almost invariably, if not always, an occurrence related to the erosive effect of acid-peptic juice. Inasmuch as the vagi nerves are divided in this maneuver, obviously, a concomitant Heineke-Mikulicz pyloroplasty also must be done.

The Problem of Gastric Ulcer

The garden-variety of benign gastric ulcer usually can be identified as such by a competent roentgenologist. Complete healing of the defect attending the ingestion of a Sippy milk diet for a period of two or three weeks, when well controlled roentgenographically, is a safe procedure in most acute gastric ulcers. However, failure of the defect to heal completely is an indication that operation is in order.

There are, however, peptic ulcers which cannot be differentiated from cancer. A more aggressive attitude by surgeons in the management of the gastric ulcer problem is therefore very much in order.[9] Moreover, the very circumstance that gastric ulcer is frequently recurrent at the very same site suggests that the gastric mucosa may not have regenerated completely over the defect.

Approximately five years ago, a number of my surgical colleagues in this Clinic followed thirteen patients with gastric ulcer to complete healing under carefully controlled medical management.[5] At that time, with the patients' consent, gastric resection was undertaken with a view to studying the situation microscopically. Interestingly enough, one of these ulcers which appeared to have healed completely under roentgen control was a cancer. Of the remaining twelve, only one showed perfect healing of the defect in the mucosa. In the remaining eleven, there were peninsulas of mucosa going out from the edges of a tiny residual defect, the center of which was not covered by gastric mucosa. Inasmuch as the mucosa was absent over a portion of the former ulcer, it is quite obvious that the nidus for a new ulcer still existed despite the apparent filling in of the ulcer.

Diet.—A smooth bland diet with milk as its base is undoubtedly the best dietetic regimen for the patient with peptic ulcer. It is to be remembered that it is the protein in the milk which decreases the acidity of the gastric juice. Patients who are above their optimal weight would do well to substitute skim milk for whole milk. Moreover, skim milk is a more effective agent in the control of acidity because the patient will ingest more of it than of whole milk.

Alcohol, coffee (and caffeine in any form) and tobacco are taboo for the peptic ulcer patient, who is trying to control his disorder by dietary methods. Whereas, antacids and depressants of gastric secretion, like Banthine, often afford fairly direct symptomatic relief, my experience has been that the relief in most instances wears out and the patients come seeking the more durable satisfaction of an adequate operation.

Operations for the Relief of Peptic Ulcer

Gastric Resection.—A number of operations appear to afford satisfactory protection against recurrent ulcer. During the past decade, standardization of the extent of excision of gastric tissue in Billroth I and II operations has come about. The incidence of recurrence after well-performed operations is approximately 1 per cent.[10] The majority of surgeons who have had a large experience in the surgical management of peptic ulcer have come to appreciate that it is not necessary to excise the ulcer to allay the peptic ulcer diathesis. The complaint of patients and surgeons, however, concerning these procedures has been that too frequently the operation, whether performed on the Billroth I or II plan, is accompanied by a group of symptoms commonly lumped together as the "dumping syndrome." Loss of weight is observed quite regularly; and attending the ingestion of food, sweating, palpitation and tachycardia, accompanied by the desire to lie down occur. Persistence of these symptoms, in some degree, is noted in approximately 20 per cent of patients undergoing the Billroth type of resection; in about 2 per cent of patients, these symptoms appear to be disabling.

Vagotomy.—Gastrojejunostomy and pyloroplasty have proved to be unsatisfactory operations in the relief of peptic ulcer.

During the past decade there has been considerable renewal of interest in vagotomy as an operative procedure for peptic ulcer. Dragstedt and his associates[3] (1951) who have made important contributions to our knowledge concerning gastric secretion in man, have insisted on the completeness of vagotomy as an essential feature of a successful operation. Today, however, very few surgeons perform vagotomy as an isolated primary operative procedure. Some add a drainage operation such as gastrojejunostomy; others remove the antrum as well. Some surgeons hold to the principle of gastric resection but feel that the protection afforded by a concomitant vagotomy is such that a lesser resection will suffice than if gastric resection alone is done. In other words, a 50 per cent gastric resection with an added vagotomy has been substituted for a 75 per cent gastric resection. Whether such a resection will ultimately afford the promise of the conventional three-quarter Billroth operation remains to be observed.

It needs to be said in this connection that surgeons, like myself, who affect a special interest in the peptic ulcer problem see each year a few patients who successively have had gastrojejunostomy, vagotomy, gastric resection, followed in turn by an additional gastric resection or two—the patient still continuing to have a persistent peptic ulcer. I have had several skirmishes with patients who have had such a succession of operations. The interesting finding at a fifth or a sixth operation is that invariably there is still a good deal of residual stomach. In the beginning, such patients have usually been hypersthenic—patients of the drayman type of constitution. The extrapleural sternal splitting inci-

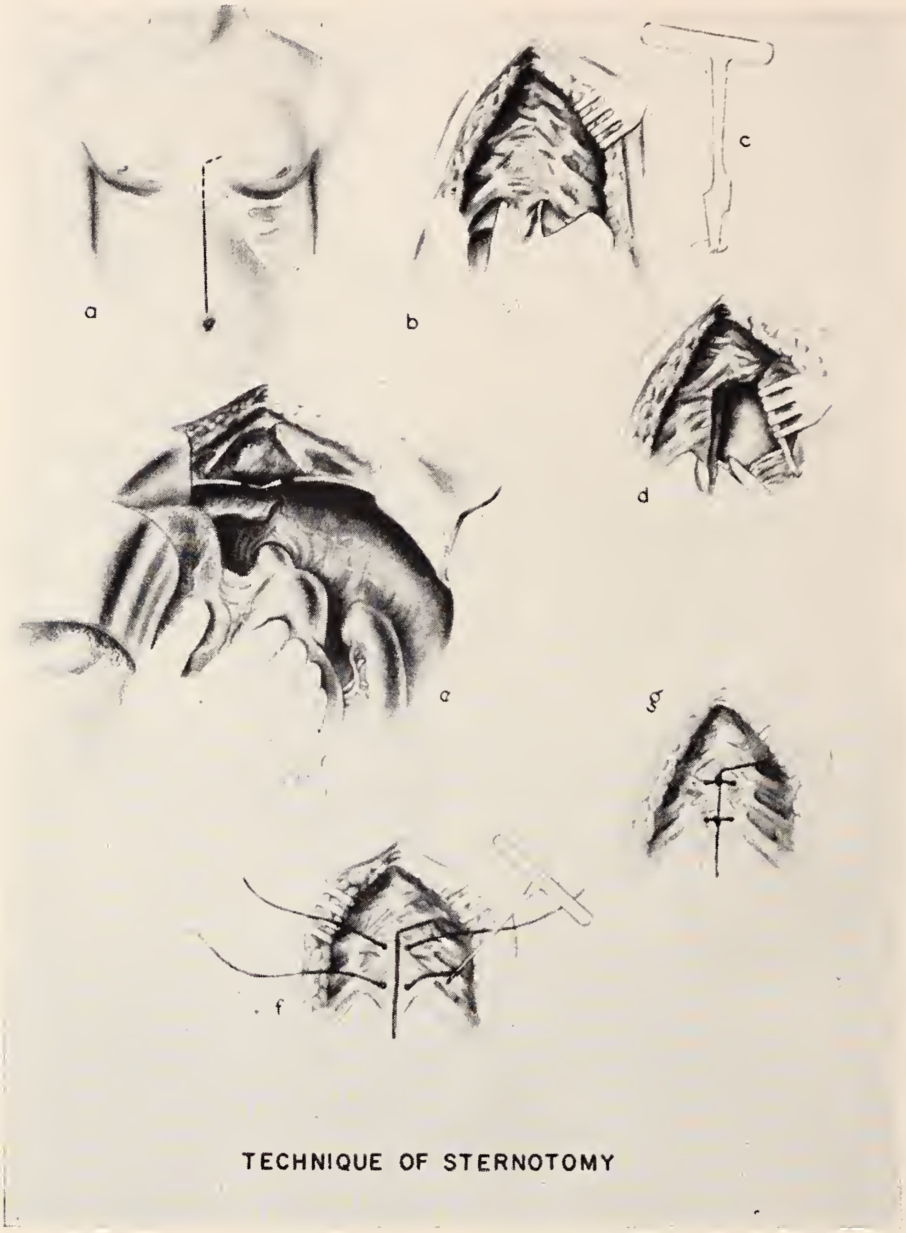


Fig. 3. The Extrapleural Sternotomy Incision: (a) The incision. (b) The finger is inserted beneath the ensiform, preparatory to the insertion of the Lebsche sternal knife. (c) The Lebsche sternal knife. The knife is driven with an ordinary orthopedic hammer. (d) The left margin of the divided sternum is retracted laterally. The knife is shown cutting the diaphragm downward. The incision in the diaphragm extends to the point at which the pericardium comes directly into view. It is obvious that a deliberate opening of the pericardium will permit even easier retraction of the rib margin on the left side. (e) The exposure obtained with the sternotomy incision. The whole attic of the upper left abdomen comes immediately into view. The avascular ligament of the left lobe of the liver has been divided and the liver has been retracted to the right. It is obvious that this incision affords excellent exposure for repair of paraesophageal hernia as well as for total gastrectomy, in which procedure excision of several centimeters of esophagus is to be performed. Moreover, sternotomy is very helpful in the conventional sub-total gastric resection and is employed routinely in this Clinic in that operation. (f) Rewiring of the sternum. Ordinarily, two No. 24 stainless steel wires suffice. The hand driven awl with a short side arm for engaging and pulling the wire through is shown. (g) The sternum is re-wired. The mid-line incision in the abdominal wall is closed in the conventional manner with two rows of interrupted silk.

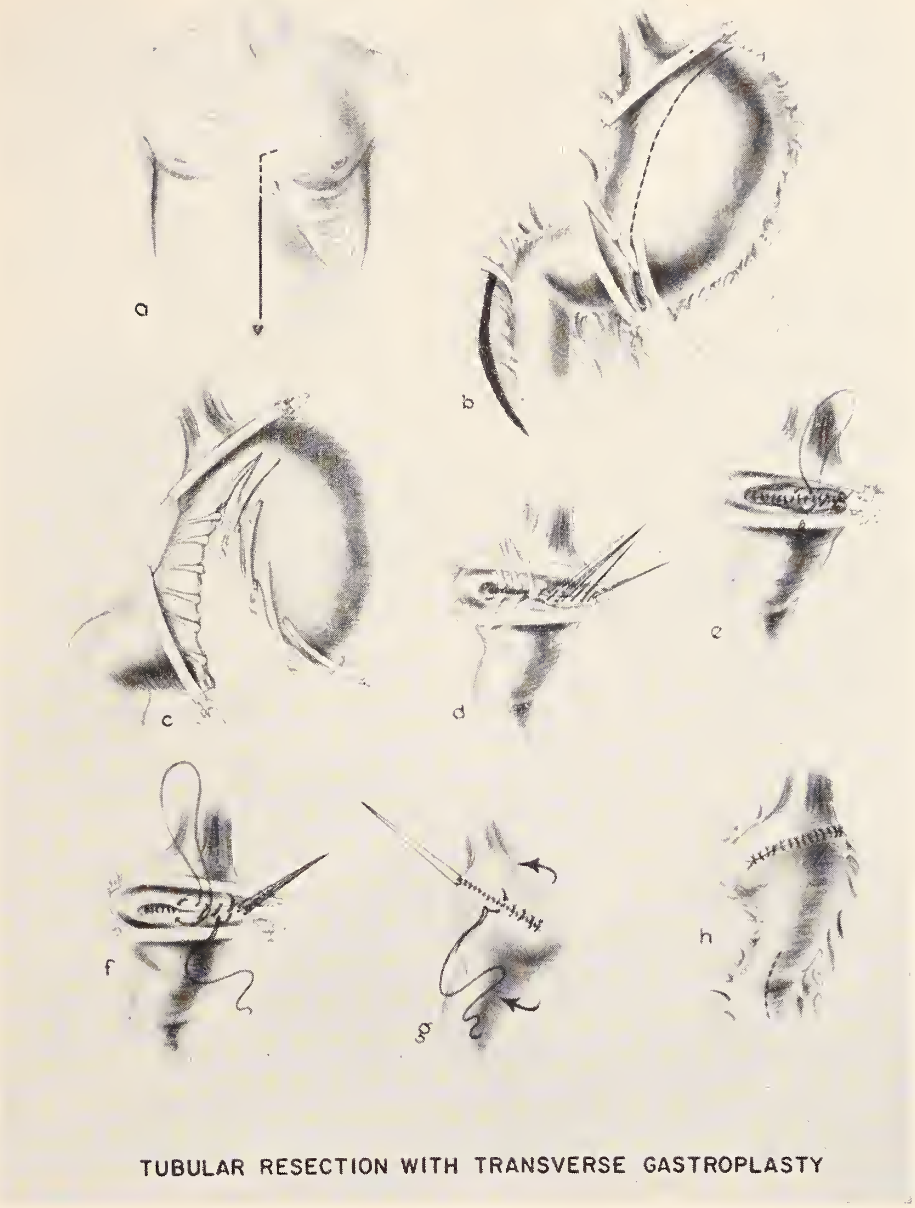


Fig. 4. Tubular Resection: This is the operation currently employed in this Clinic for duodenal ulcer. Obviously it is not applicable to gastric ulcer. The extent of the excision in the acid-secreting area is not quite as large as that in segmental resection. A comparison of illustrations (b) and (c) will suggest that, in tubular resection (c) a short segment of acid-secreting mucosa is left along the lesser curvature which is removed in segmental resection. The vagi are not divided in this procedure. Consequently a pylorotomy is necessary only in instances where there is narrowing of the duodenum or in the presence of massive hemorrhage from the duodenum.

Both segmental and tubular resection have been employed with satisfaction in the "idiopathic" strictures of acid-peptic ulcer. Inasmuch as free gastric drainage is so important in the relief of acid-peptic strictures of the esophagus, a Heineke-Mikulicz pyloroplasty is added, even though pyloric obstruction is not present.

Tubular resection has proved to be an eminently satisfactory operation in the management of duodenal ulcer. Tubular resection protects against the histamine-in-beeswax provoked ulcer in the dog.

sion (Fig. 3), which affords excellent approach to the attic of the abdomen, makes it possible to view with care the nature of the attachment of the fundic end of the stomach to adjacent viscera. Patients have come to me with the statement that they have been advised to have a total gastrectomy. I have not found it necessary to resort to this expedient. Ordinarily, 90 to 100 gm. of stomach are still available for excision in a fifth or sixth operation, leaving on completion of the anastomosis a residual gastric fragment constituting approximately 10 per cent of a normal sized stomach.*

In other words, whereas vagotomy and antral excision appear to be sound operations physiologically for the relief of peptic ulcer, the occurrence of situations like those just alluded to occasions one to be cautious in accepting as completely valid the belief that antral excision plus vagotomy is adequate to thwart the ulcer diathesis.

In the dog, vagotomy offers considerable protection against the ulcerogenic effect of the histamine-in-beeswax preparation. Yet, when a drainage operation, such as a concomitant gastrojejunostomy or antral excision is done, the vagotomy appears to have lost a great deal of its protective action.[7]

Segmental Gastric Resection.—This Clinic has had a satisfactory experience with the employment of segmental gastric resection in the management of duodenal ulcer.[16] The procedure also is adaptable to benign gastric ulcers not located in the antrum. Inasmuch as transverse division of the stomach vagotomizes the antrum, it is essential to perform routinely complemental pyloroplasty to insure satisfactory emptying.

No recurrences of ulcer have been observed in approximately 100 patients subjected to segmental gastric resection in this Clinic. However, the incidence of the "dumping syndrome" has been sufficiently great to suggest that this procedure is not an ideal operation for peptic ulcer, though probably superior to the Billroth operations. Achlorhydria is observed rather frequently following segmental resection.

Tubular Gastric Resection.—Enough experience has now been had with this operative procedure in the surgical relief of peptic ulcer to indicate that it appears to be an eminently satisfactory operation for duodenal ulcer.[14,17,18] Obviously, inasmuch as the entire lesser curvature of the stomach remains, this operation has no application in the management of gastric ulcer.

This operation has the advantage over segmental gastric resection in that inasmuch as the lesser curvature remains intact, no portion of the stomach is vagotomized. In consequence, it is not necessary to perform a complemental Heineke-Mikulicz pyloroplasty (Fig. 4), save in the presence of active bleeding, or in the presence of some degree of obstruction occasioned by an indurated duodenum.

The Heineke-Mikulicz pyloroplasty whether done in segmental resection or in tubular gastric resection circumvents the difficult problems of the large supraduodenal ulcer crater. In consequence, the surgeon can with relative equanimity make a long longitudinal opening, cutting across the anterior portion of the pyloric muscle. An excellent view of the lower antrum and the first portions of the duodenum is provided. Surgeons in our Clinic have learned a good deal concerning the appearance of ulcer through the simple expedient of opening the duodenum.

Tubular resection with a concomitant pyloroplasty has simplified the problem of dealing with brisk hemorrhage from an actively bleeding duodenal ulcer at operation. The technique of the operation of tubular gastric resection is shown in the accompanying diagrams (Fig. 4).

Symptoms of the "dumping syndrome" are observed less frequently after this operation than following any of the other resection techniques. Achlorhydria after histamine stimulation does not occur as frequently as after segmental resection. The volumes of gastric juice, however, are quite regularly small. MacLean[8] finds that patients having tubular resections absorb 95 per cent of the fats ingested. This observation indicates quite definitely that weight loss is owing essentially to diminished intake of food. It is to be remembered too that an ulcer regimen is a fattening diet, and that following operation, patients are inclined to veer away from the high caloric diet generally prescribed for patients with peptic ulcer.

---

*I have yet to see a recurrence following this type of operative correction—a procedure which has been carried out on a fairly large number of patients who have had multiple antecedent operations for peptic ulcer over the last fifteen years.

Summary

Peptic ulcer is still a challenging problem. Whereas there has been a very significant overall reduction in the mortality of acute appendicitis and bowel obstruction during the past two decades, no such reduction in the mortality of peptic ulcer has come about. This circumstance is owing largely to deaths occurring through the agency of hemorrhage. Inasmuch as satisfactory operations are now available which thwart the ulcer diathesis in an effective and lasting manner, there would appear to be no good reason to withhold operation from patients who have had more than one episode of hematemesis from peptic ulcer. When the medical profession learns to manage the threat of hemorrhage from peptic ulcer in a satisfactory manner, the mortality of the disorder largely will have disappeared.

During the past decade, the medical profession has learned how to control the serious threat of perforation. Through the agency of improved surgical care, including employment of antibiotics and a better toilet of the peritoneal cavity at the time of the closure of the perforation, the mortality of perforation is no longer as serious as it was a decade ago. In fact, a number of surgeons, in selected patients, are carrying out gastric resection at the time when the perforation is dealt with.

The gastric ulcer constitutes a special problem. The hazard of confusing a benign gastric ulcer with cancer is real. Inasmuch as gastric ulcers frequently recur at the very same site despite apparent satisfactory healing attending medical management, earlier and more frequent recourse to operation is in order.

Satisfactory operations which allay the ulcer diathesis are available. Moreover, in this area alone, a large number of patients who have been subjected to a satisfactory operation for ulcer have been taken on as standard risks by insurance companies after the lapse of five years following operation, no recurrence having been observed meanwhile. When it is recalled that patients with peptic ulcer are not insurable, this very circumstance speaks eloquently for the faith of actuarians in the protection of an acceptable operation against ulcer recurrence. When patients with recurrent gastric hemorrhage are urged to accept the protection of operation, the mortality of peptic ulcer, like that of appendicitis and bowel obstruction, will begin to exhibit definite evidence of betterment.

Tubular gastric resection appears to be an eminently satisfactory operation for peptic ulcer. It protects against the histamine-in-beeswax provoked ulcer in dogs. This operative procedure carried out through an extrapleural sternal splitting operation is essentially a simple operation. It is to be remembered that it is *antral exclusion* and *not retention* of the antrum which abets the ulcer diathesis. Were this not true, every man retaining his antrum would be a potential candidate for the occurrence of peptic ulcer. It is the writer's feeling that as long as the antrum is *in contact* with the residual gastric pouch, retention of the antrum does not abet the ulcer diathesis.

The etiology of peptic ulcer still remains in part an enigma. The corrosive effect of acid-peptic juice is the most important single agent. However, there are a large number of items such as fatigue, spasm of the blood vessels of the mucosae over which the acid-peptic juice may ply, blood loss, and other stress factors which abet the ulcer diathesis and yet fail to augment gastric secretion.

Of all the juxtagastric lying segments of the alimentary tract, the mucosa of the esophagus appears to be the most sensitive to injury by acid-peptic juice. In fact, it appears certain that esophageal peptic ulcer occurs far more commonly than has been generally believed. In fact, it may safely be said that every "idiopathic" stricture of the esophagus is acid-peptic ulcer of the esophagus. Similarly, it would appear too that "spontaneous perforation" of the esophagus is acid-peptic perforation of the esophagus.

Patients who get along well without any complication on medical management are not candidates for surgery. The patient to whom the monotony of the ulcer diet does not appeal, the patient who is never long wholly free from pain, the patient with recurrent gastric hemorrhage, as well as the patient with periodic episodes of obstruction—all these patients should be advised to have operation for the relief of peptic ulcer.

The key to reduction of the prohibitively large mortality from peptic ulcer which exists today in patients between the ages of forty and seventy, is more ready recourse to operation in patients who have persistent difficulty. And in patients who have suffered hemorrhage, such occurrences must come to be recognized as synonymous with failure of adequate control by conservative means. Only when hemorrhage comes to be viewed as an indication for operation—only then will the reproach of the present large mortality from peptic ulcer in the mature years of life become replaced by a record of objective accomplishment. The grave hazard of hemorrhage must come to be viewed with serious concern by every physician who affects an interest in peptic ulcer. Moreover, patients with ulcer as well as the public should come to know that hemorrhage is the most important single cause of death from peptic ulcer.

References

1. Cooper, D. R., and Ferguson, L. K.: Gastric resection for upper gastrointestinal hemorrhage of undetermined cause. J.A.M.A., 151:879-884 (Mar. 14) 1953.
2. Dragstedt, L. R.: Acid ulcer. Surg., Gynec., & Obst., 62:118, 1936.
3. Dragstedt, L. R., and Woodward, E. R.: Appraisal of vagotomy for peptic ulcer after 7 years. J.A.-M.A.,145:795-800 (Mar.) 1951.
4. Ferguson, D. J.; Sanchez-Palomera, E.; Sako, Y.; Clatworthy, H. W., Jr.; Toon, R., and Wangensteen, O. H.: Studies on experimental esophagitis. Surgery, 28:1022-1039 (Dec.) 1950.
5. Friesen, S. F.; Sanchez-Palomera, E.; Tongen, L., and Wangensteen, O. H.: Unpublished data, 1948.
6. Lillehei, C. W.; Dixon, J. L., and Wangensteen, O. H.: The relation of anemia and hemorrhagic shock to experimental ulcer production. Proc. Soc. Exper. Biol. & Med., 68:125-128, 1948.
7. Lillehei, C. W.; Lewis, F. J., and Wangensteen, O. H.: The limitations of a gastric drainage operation upon the effectiveness of vagotomy. Rev. of Gastroenterol., 15:487-497 (July) 1950.
8. MacLean, L. D.: Tubular gastric resection. A preliminary evaluation. Bull. of Univ. of Minn. Hospitals, 24:255-273 (Jan.) 1953.
9. Ochsner, A., and Blalock, A.: Cancer of the stomach. J.A.M.A., 151:1377-1384 (Apr. 18) 1953.
10. Rauch, R. F.: An evaluation of gastric resection for peptic ulcer. Surgery, 32:638-653 (Oct.) 1952.
11. Vital Statistics of the U. S., Bureau of the Census, 1949, (Published in 1951).
12. Wangensteen, O. H.: Non-Operative Treatment of Localized Perforations of the Duodenum. Minnesota Med., 35:477, 1935.
13. Wangensteen, O. H.: Aseptic gastric resection; a method of aseptic anastomosis adaptable to any segment of the alimentary canal (esophagus, stomach, small or large intestine); including preliminary description of subtotal excision of the acid-secreting area for ulcer. Surg., Gynec. & Obst., 70:59-72, 1940.
14. Wangensteen, O. H.: The ulcer problem (1) Etiology, with special reference to an inter-relationship between the vascular and acid-peptic digestive factors. (2) Characterization of a satisfactory operation which will protect against recurrent ulcer. Canad. M. A. J., 53:309, 1945. (Lister Lecture.)
15. Wangensteen, O. H.: An assessment of etiologic aspects of peptic ulcer and surgical therapy: (Including obscure, massive acid-peptic linked hemorrhage, esophagitis and cardiospasm and their surgical relief.) Tr. & Stud., Coll. Physicians, Philadelphia, 18:1-16, 1950. (Alvarenza Lecture.)
16. Wangensteen, O. H.: Segmental gastric resection for peptic ulcer. J.A.M.A., 149:18-23 (May) 1952.
17. Wangensteen. O. H.: Surgical lesions of the esophagus (including discussions of esophagitis, "spontaneous" [Acid-Peptic] perforation of the esophagus, dystonia (cardiospasm) paraesophageal hernia, varices and cancer, together with remarks upon surgical management of peptic ulcer). Rev. of Gastroenterol., 19:525-549 (July) 1952.
18. Wangensteen, O. H.: Evolution and evaluation of an acceptable operation for peptic ulcer (including description of the technique of tubular gastric resection with transverse gastroplasty, and extrapleural sternotomy for operations in the attic of the abdomen). Rev. Gastroenterol. (Sept.) 1953.
19. Wangensteen, O. H., and Leven, N. L.: Gastric resection for esophagitis and stricture of acid-peptic origin. Surg., Gynec. & Obst., 88:560-570, 1949.

GREATER SELECTIVITY IS URGED IN USING ANTIBIOTIC THERAPY

A plea for greater selectivity in antibiotic therapy was made by Nelson of Temple University at a meeting of the New Orleans Graduate Medical Assembly held March 2-5, 1953†

In self-limiting diseases, severe infections not affected by available antibiotic agents, and noninfectious diseases simulating infectious ones, the speaker said, antibiotic therapy is unnecessary. Among the adverse effects of unnecessary treatment, Nelson held, are: possible carelessness in diagnosis, risk of untoward reactions of these agents, development of bacterial resistance, and the establishment of a new resistant bacterial flora.

The most widely active pathogens in the new-born seem to be Gram-negative bacilli and Staphylococcus aureus, the speaker stated, and these should be combatted with broad antibiotic coverage.

Patients with suspected osteomyelitis may be given aureomycin or terramycin alone. Penicillin alone was not advised. "Furthermore, treatment should be continued for at least two and one-half to three weeks in these cases."

"There is now an increased need for diagnostic acumen," Nelson said. "We are in an extremely dangerous position diagnostically—since the old familiar patterns do not appear when there has been early treatment."

---

†Nelson, W. E.: Paper presented at The New Orleans Graduate Medical Assembly, New Orleans, March 2-5, 1953.

MALE STERILITY

HAROLD J. WALDER, M.D.
Duluth, Minnesota

THE PROBLEM of management of the infertile and subfertile male is a challenge to many physicians. The urologist is especially interested in the correction of anomalies, such as hypospadias and cryptorchidism. However, public demand has prompted many urologists to become interested in sterility studies. Primarily, to collaborate with the gynecologists and obstetricians, these studies have been made.

Since January, 1948, 329 semen specimens have been examined from 271 patients. These examinations included previous examination of the wife by an obstetrician in most cases.

In the case of the male patients, a routine physical examination was done, including a sterility history and examination. An outline of the history and special examination followed in each case is given in Figure 1.

STERILITY HISTORY (MALE)

Number: ____________
Wife's No.: ____________
Referred by: ____________

Name: ____________________ Age ____ Has wife been examined? ____
Number of examinations? ____
Previous marriages and pregnancies: ______ Number of hours or days since intercourse ____

Previous Illness
(age, complications, treatment)

Mumps
T. B.
Syphilis
Gonorrhea
Fevers
Prostatitis
Infections

Operations

Hernia
Stricture
Hydrocele
Cryptorchidism
Other Operations

Genital Injuries

Habits and General Health

Alcohol
Tobacco
Occupation
Relaxation
Tension
Fatigue
Libido
Erection
Position
Love Play
Duration of Act
Vaginal Penetration
Vaginal Leakage
Hot tub baths
Jockey shorts

GENERAL EXAMINATION

	Size	Consistency	Location
Penis			
Testes			
Epididymis			
Prostate			
Seminal Vesicles			
Vasa			

Weight
Height
Build
Span
Lower Half
Hair:
  face
  body

Fig. 1.

From the Department of Urology, Duluth Clinic, Duluth, Minnesota.

Read before the Centennial Meeting of the Minnesota State Medical Association, May 19, 1953.

The ages of the patients in this study ranged from eighteen years to forty-nine years. The average age was twenty-seven years. Eleven specimens were by withdrawal, the rest by masturbation.

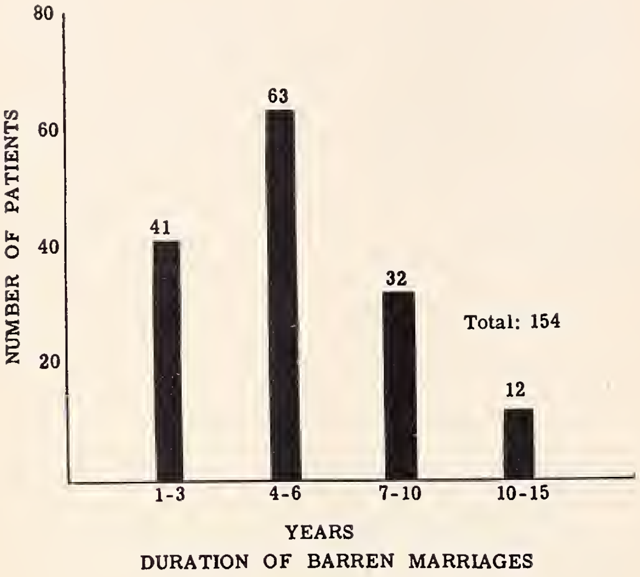


Fig. 2.

In each case the total specimen was measured, and all counts were made by the same individual. On several occasions the specimen was separated into two containers and sent to the laboratory. The proximity of the two counts was always surprisingly close. It is accepted that sperm counts can be remarkably consistent if one does enough of them to perfect the technique and minimize errors due to viscosity.

Morphology and motility of sperm were studied in each case, realizing that recognition of abnormal forms depends on personal and technical factors. To minimize this, the same individual carried out all of these examinations. Consistency of pattern for an individual on repeated specimens was interesting. In one case, a large irregular glob of mucus surrounding what appeared to be the normal head of each sperm was noted on repeated specimens. In another case it was noted, on repeated specimens, that each sperm had a neck piece much larger in diameter than the head.

The duration of barren marriages is shown in Figure 2. It is noted that most people seek consultation after four to six years of marriage.

The patients were then grouped according to the number of million sperm per cubic centimeter (Fig. 3.) Of the 271 cases, 34 per cent were sterile or considered subfertile. Twenty-five showed azoospermia. In this group, only four patients were noted with physical defects due to previous injury or mumps. In the group with 1 to 5 million sperm cells, six patients had physical defects. It can be noted that only one small hydrocele was noted among all of those cases with counts above 100 million per cubic centimeter.

A total of eighty-nine of the patients had received previous treatment, either by injection or oral medication. These were divided into groups according to their sperm counts and are shown at the top of chart (Fig. 3—Rx.) It was noteworthy that many were treated before a sperm specimen was examined. The number of patients previously treated are shown above the line, and the number having had a sperm specimen examined are shown below the line. Thus, of those twenty-five patients with azoospermia, eleven had been treated, and only two of the eleven patients had had a sperm specimen examination. Here, one can note the futility of any attempted treatment without a sperm specimen having been examined.

One other important consideration is the fact that often the wives of these patients may have had one or more examinations, at considerable expense, since the man is often reluctant to be examined early. This expense to the patient may be obviated by urging early examination of the husband in any barren marriage case study. On the basis of this study, this procedure is urgently stressed.

Eighteen patients with bilateral testicular biopsy were examined. Only one patient with oligospermia was examined—this on the basis of the patient's insistence on the procedure before adoption proceedings were initiated. Because of our inability to recognize specific deficiencies (endocrine, dietary, et cetera), biopsy has not been encouraged in cases of oligospermia. In the seventeen patients with azoospermia, all showed absence of spermatogenic cells. No individual with normal spermatogenesis and apparent obstruction of the tubular system was encountered. Transient oligospermia was encountered in several cases (Fig. 4.) *Case 1* showed some improvement on thyroid therapy when the basal metabolic rate was increased from -19 to +5. In this case there has been no conception after three years of observation and therapy. *Case 2* shows a wide variation with no treatment, as does *Case 3*. These tend to show the importance of repeated sperm examinations.

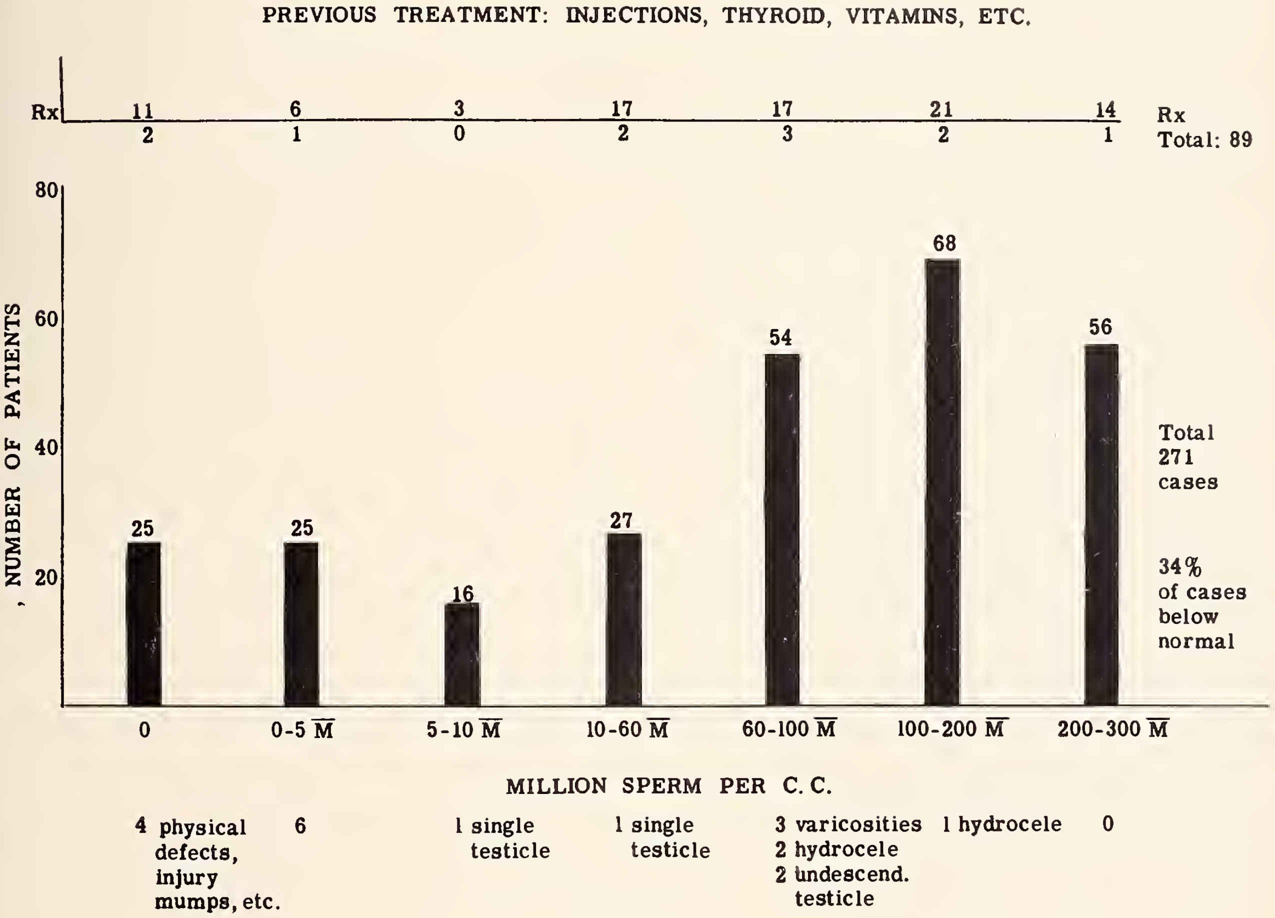


Fig. 3.

TRANSIENT OLIGOSPERMIA

Case 1		Feb. '50 19 $\overline{M}$	May '50 61 $\overline{M}$	Sept. '50 47 $\overline{M}$	BMR: -19→+5 Thyroid
Case 2		Aug. '50 97 $\overline{M}$	Nov. '50 178 $\overline{M}$	March'51 186 $\overline{M}$	No Rx
Case 3		July '50	Nov. '50	Dec. '50	
	July 11	460 $\overline{M}$	291 $\overline{M}$	213 $\overline{M}$	
	July 19	448 $\overline{M}$			

Fig. 4.

It is not the purpose of this discussion to consider various forms of therapy, but to relate the findings in a routine series of cases. In a few instances treatment of the man or woman has led to conception. The greatest success has been in selecting those cases in which conception is highly improbable. A detailed discussion of the findings with the family, and often helping them with adoption proceedings, has been most gratifying in eighteen instances. These have been our most satisfied and grateful patients. Experience has shown that adoption agencies seem to be

(Continued on Page 952)

EVALUATION OF FEMALE STERILITY

LOUIS L. FREIDMAN, M.D.

Saint Paul, Minnesota

THE PROBLEM of the childless couple is as old as the Bible. It has been estimated that 10-17 per cent of all marriages in the United States are barren. With few exceptions all young couples want children and it is of great importance to them to know whether they can, cannot, or are unlikely to achieve pregnancy. Most women who consult the doctor for the first time regarding their childlessness expect only a superficial inspection is necessary to solve the situation. The day is past when in the absence of gross pelvic pathology, the female seeking aid is given a pat on the back and told to go home and try for another year. The present-day concept of the infertile couple is a complex one and its solution extends far beyond mere conversation and encouragement but involves a thorough time consuming study of both husband and wife. It is of very little importance which one, the man or woman, is investigated first. Usually they are worked up simultaneously. The management of the sterile marriage may be divided into three phases: orientation, investigation and treatment.

When to Investigate

The old idea of waiting three years before considering a mating sterile is outmoded, for in large series of cases it has been shown that 80 per cent of couples will conceive in six months and 90 per cent within one year. We feel that one year of trial is a long enough time before the investigation is begun. The use of contraceptives has become an integral part of our society and may easily mask sterility. It would therefore seem wise to advise all young couples given contraceptive advice not to wait too long, certainly not more than a year, before proving their fertility.

Orientation

Before starting the investigation it has been our custom to orient each couple, spending thirty minutes or more covering the scope and complexities of the problem. In easily understood language, the basic physiology and the reasons for each procedure is explained. This orientation will inevitably be followed by better co-operation and more satisfied patients. It will lay the groundwork for the necessary patience in the often difficult study that lies ahead. The couple is told that the investigation will take eight to twelve weeks after which a second orientation is held. At this time all the disclosed factors, both male and female, are evaluated as a single biological unit, and an attempt to estimate the fertility potential is made. In the absence of absolute sterility they are told that approximately one year will be spent in treatment. They are advised to accept the whole plan "hook, line and sinker" or to delay the study.

Human beings are at best relatively fertile and there is no definite scale by which fertility can be measured accurately. The index of fertility is the sum total of all the factors both male and female. It is often forgotten that we are not dealing with normally fertile individuals. Highly fertile couples can produce babies under most any circumstances. However, an altogether different situation confronts the infertile couple. It can be said to these patients, "If you could have, you would have achieved pregnancy; so something must be wrong." Therefore, any and all factors no matter how small must be corrected. An adequate investigation will reveal etiological factors in 90 per cent of couples and these factors are usually multiple.

Statistical evaluation of etiological factors in sterility are of questionable value because so much depends on the particular investigator's interest, the material available to him, and the health of the general population in the area where he resides. Rabeau in the state of Israel found tuberculous endometritis in 10 per cent of 209 sterile couples. We have not found one in more than 300 endometrial biopsies. Overstreet in California finds the cervix at fault in 70 per cent of his cases. This is nearly three times the incidence in our cases. If you evaluate

---

From the Department of Obstetrics and Gynecology, University of Minnesota Medical School.

Read before the Centennial Meeting of the Minnesota State Medical Association, Saint Paul, Minnesota, May 19, 1953.

clinic patients you will find a larger proportion of infections with more occluded tubes than in private patients. All factors disclosed in the diagnostic survey are important and it is unwise to place greater significance on one because it is more frequent. Our studies show that the man is at fault in about one-third, the woman one-third and both are at fault in one-third of cases.

The investigation of the sterile female is usually divided into five factors:

1. *Constitutional factors* as anemias and chronic infections.

2. *Pelvic Conditions* which include congenital anomalies, infections, and tumors.

3. *The Cervix and Vaginal Factor* which is hostility or inadequacy of the cervical secretions and failure to deposit the semen properly.

4. *The Tubal Factor,* which is partial or complete occlusion and faulty motility of the fallopian tubes.

5. *Endocrine Factors,* which include hypothyroidism and disturbances in menstrual rhythm such as amenorrhea; dysfunctional bleeding; anovulatory bleeding and inadequate corpus luteum effect. Relatively few women of infertile couples have primary endocrine defects and even when these factors are at fault, therapeutic benefit is difficult to obtain. Aside from the use of thyroid we use very little hormonal therapy.

Minimal Diagnostic Survey of Wife

1. History and complete physical examination
2. General laboratory examination
    a. Blood Wassermann
    b. Complete blood count
    c. Sedimentation rate if there is a high white blood count
    d. Urinalysis
    e. Rh factor
3. Basal metabolism
4. Ovulation
    a. Basal body temperature
    b. Endometrial biopsy
5. Rubin test and if necessary uterosalpingography
6. Post coital tests
7. Miscellaneous tests if indicated
    a. Cervical culture and smear for infections
    b. Vaginal hanging drop for trichomonas vaginitis

History

The history should be complete, with particular attention to the onset, character and periodicity of the menstrual flow. The regular occurrence of menstrual cramps suggests ovulation. Special emphasis is given to a previous history of pelvic infection, abortion or abdominal operations. The types of medications and previous treatment should be recorded. Any excess in diet, alcohol, tobacco, sleep or coital habits may be important. Present and past occupations, previous marriage and period of present marriage, length and type of contraceptives used are also noted. To save time we use a prepared questionnaire which is gone over with a red pencil underlining the important points.

Physical Examination

The examination must be complete with special attention paid to general body architecture as regards to distribution of hair, fat, development of the breasts, external genitalia, and must include a thorough pelvic examination. Too much has been written about the hypoplastic uterus and far too many women are being told that their "womb is underdeveloped." In the presence of regular menstruation a small uterus is rarely the cause of sterility. There is variation from patient to patient and also a difference in size premenstrually and postmenstrually in the same female. Over the years we have encountered many obstetrical patients who volunteer that they were told that they would have trouble achieving pregnancy because their uteri were too small.

Value of Laboratory Tests

The role played by focus of infection in sterility has always been vague and different observers have associated varying degrees of importance with it. Disregarding these beliefs, no one will deny the absolute necessity of maintaining the best possible general health in a sterile couple as a unit. Even when one factor can be fairly well ascertained as the primary etiologic element, the so-called combined fertility index must be sustained at a peak. This assumes even greater significance in those enigmatic cases, in which no obvious factor in either partner can be discovered to explain the lack of fecundity. It therefore is of vital importance to determine the absence of anemia, chronic infection as reflected in the blood and the urinary systems.

Basal Metabolism

The relationship of thyroid activity to sex and its functions has long been recognized, but the nature of this relationship has been the subject of endless speculations and conflicting theories. The exact mechanism is far from clear. Litzenberg, in 1926, was the first of many to point out that hypometabolism is found with unusual frequency in women who cannot conceive and that the administration of thyroid to such women may enable them to become pregnant. Hypothyroidism on a clinical or subclinical basis has been described by many authors as a predominant factor in 10-25 per cent of females of barren couples.

The basal metabolism test is not an accurate method of determining thyroid activity, but it has enough statistical merit so that we recommend it for both the man and woman of every barren couple. Thyroid is given to all our sterility patients in whom the basal metabolic rate is plus 5 or below, for perhaps the best diagnostic test for subclinical hypothyroidism is the reaction of the patient to increasing doses of thyroid. The patient is started on small dosage of dessicated thyroid which gradually is increased to tolerance, which may take four to eight weeks. It has been our experience that thyroid therapy must be individualized because of the great variation in response of individuals, regardless of their initial basal metabolic rate. Tolerance is measured by a record of the pulse rate at regular intervals, and from the clinical signs of increased appetite, loss of fatigue and such. If palpitation, insomnia, tremor, or other symptoms of hyperthyroidism develop, the dosage is cut to the level below. Metabolism tests are repeated at infrequent intervals until the therapeutic level is reached. We do not share the concern of many internists over the wide use of thyroid in infertility patients with normal basal rates. If patients are oriented as to the signs and symptoms of overdosage and are checked at regular intervals, it is very unlikely that there will be any danger from this type of treatment.

Basal Body Temperatures

The simplest and perhaps the most popular method of determining ovulation is the basal body temperature record. Investigations on castrates have shown that progesterone causes a rise in basal temperature of a half a degree or more, and in these studies, this rise has been demonstrated to take place within twenty-four hours of the dosage used. In a normal ovulating woman the temperature graph is biphasic, and usually indicates ovulation 14 plus or minus 2 days before the onset of the next menstruation. The temperature should rise at least one half degree and remain elevated for ten days. Rectal and vaginal methods are not necessary; oral temperatures are satisfactory and are taken daily within one hour of the same time on awakening before getting out of bed. The thermometer is kept in the mouth five minutes. It must be remembered that this five-minute period is only one of the 1440 minutes of a whole day and it is futile to contend that ovulation takes place just before or just after the rise of the curve. Ovulation must be accepted as an unpredictable event and as yet there is no available test for precise timing. In timing intercourse to ovulation, because spermatozoa have been shown to survive forty-eight hours or more in the upper generative tract, it is best to be too early rather than too late with regard to the rise of the temperature curve. In some cases, the curves are far from satisfactory and do not mirror the corpus luteum effect as indicated by endometrial biopsies.

In spite of the shortcomings and occasional inaccuracies of the graphs, it does tell with few exceptions: (1) whether the patient ovulates; (2) roughly when the ovulation takes place; (3) and with less accuracy whether there is anything wrong with progestational activity of the cycle. Suitable symbols to indicate intercourse, intermenstrual bleeding, increased clear discharge, et cetera, recorded on the graph may give valuable information. When the temperature remains elevated beyond eighteen days, pregnancy is likely. This is called the "poor man's pregnancy test."

Endometrial Biopsy

The biopsy is best performed two to four days before the expected menstruation and the date of succeeding menstruation should be recorded. This, however, runs the remote risk of interrupting a pregnancy. If coitus is avoided during the cycle, this risk can be avoided. Proper histological interpretation of the tissue will reveal not only whether ovulation has occurred in that cycle (secretory endometrium), but may also determine whether the progestational effect has been adequately developed for the time taken in the cycle.

For religious or other reasons, a number of gynecologists prefer to do the biopsy within twelve hours after the onset of bleeding. The tissue taken at this time will usually reveal that ovulation has taken place. However, the quality and quantity of endometrial response to progesterone effect is very difficult to establish after the onset of bleeding.

Since 5 to 10 per cent of normal menstruating women have occasional anovulatory cycles it is wise to examine the temperature graph before performing the biopsy.

Post-Coital Test

The endocervical glands secrete mucus which is relatively impenetrable to sperm throughout the cycle except in the mid-month period. Then, under the influence of a high estrogen peak, the mucus secreted becomes profuse, crystal clear, watery, and is easily penetrated by spermatozoa. Instructions are given that intercourse should take place at the time in the month that ovulation might be expected, after three to five days of abstinence. The wife presents herself in the office within three to sixteen hours without having douched. The cervix is wiped with a dry sponge and a drop of mucus from within the endocervical canal is placed on a slide and examined immediately under a microscope. The finding of ten or more motile spermatozoa per high power field in a drop of this secretion may be considered a normal test, which can be taken as presumptive evidence that there is no mechanical or chemical barrier to spermatozoa. The finding of less than ten motile sperm per high power field suggests that either the husband is at fault or more likely that the wrong time in the cycle was selected for the test, or that some condition exists in the cervical mucus which prohibits the penetration and survival of the usual number of sperm. The post-coital test is worthless, unless done at ovulation. If the cervical mucus is of thick consistency, viscous, and cloudy, poor sperm survival will result. In these cases we find it helpful to perform cyclic post-coital tests, checking the cervical mucus every other day during the week preceding and following the expected ovulation. Not infrequently motile sperm will be found in cervical mucus forty-eight to seventy-two hours after the last copulation. This does not necessarily mean that these sperm are capable of fertilization of the ovum. If there is no spermatozoa in either the cervical secretions or the vaginal pool, the husband is azoospermic or ejaculation has taken place outside the vagina. The post-coital test is never a substitute for semen analysis.

Rubin Test

This test is best carried out three to seven days after the end of the period. This will avoid the chance of interrupting an early conceptus, and also during the luteal phase there is a greater risk of gas or oil infiltrating large blood sinusoids and causing emboli. Carbon dioxide gas is introduced through a closed system under a controlled pressure at a constant slow rate of less than 30 cc. per minute. Air should never be used. Usually no greater pressure than 200 mm. of mercury is used. By being very gentle and waiting a full minute after the apparatus is in place to allow for tubal spasm, a much more satisfactory test, as indicated by kymograph tracings, can be obtained. We have been able to omit using a tenaculum on the cervix in more than 75 per cent of our Rubin tests. A kymographic attachment can be obtained for any standard Rubin apparatus. It records pressure changes, the frequency and amplitude of tubal peristalsis, and in addition provides a permanent record. Any adnexal pathology that binds tubal segments down or interrupts the rhythmic flow of contractions, may interfere with normal tubal function. If gas has gone through one or both tubes, when the patient sits up, it will bubble up under the diaphragm and this irritation will cause shoulder pain. The Rubin test does not tell us which tube or whether both are patent, but if carefully performed it can tell us: (1) whether tubes are occluded; (2) whether there is stenosis; and (3) whether there is normal peristalsis and patency of at least one tube. Failure to produce patency may be due to spasm and an antispasmodic, as nitroglycerin, placed under the tongue may reduce the spasm.

When two separate Rubin tests reveal non-patency, one can perform uterosalpingography. Neither of these tests should be performed in the presence of infection of the vagina, cervix, uterus, tubes or pelvis. We prefer to do the Rubin test first and use the opaque media with x-ray for supplementary information. The technique with uterosalpingography is more complicated and hazardous. There is reasonable proof that in experienced hands more pregnancies result from repeated insufflations with increased pressures than from intraabdominal tubal plastic operations.

Treatment

Only a brief discussion of treatment which depends on the disclosed abnormalities will be undertaken. Usually several factors are found with impaired fertility in a woman and correction or improvement of each is important. Pregnancy may follow simple therapeutic measures as proper timing of intercourse with ovulation, or gentle cauterization of an eroded cervix. Endocervicitis itself must be rigorously attacked with antibiotics. A number of conceptions will follow routine tubal insufflations and instrumentation of the cervical canal as with endometrial biopsy. The cervical mucus may never show the thin watery non-viscous characteristics that should be present at ovulation, possibly due to previous infection or extensive cautery treatment of such infection. The mucus may also be deficient in amount because of lack of normal response of the mucous epithelium to estrogen. It is worth while to give these patients small doses such as 0.1 to 0.2 mg. of stilbesterol daily during the first half of their cycle. More than this amount might interfere with the pituitary ovarium relationship and inhibit ovulation. The use of pre-coital douches containing Ringer's solution fortified with glucose has been advocated by some as providing a favorable medium in which the semen will be deposited. We have not been impressed with the advantages of this procedure and have discarded its use.

If the evidence from basal temperatures and endometrial biopsies indicates that ovulation is not occurring, there is as yet no consistently effective treatment available. In certain cases of secondary amenorrhea associated with sterility, low voltage x-ray to the ovaries and pituitary has produced ovulation and also pregnancy in our hands. The various hormonal substances used in the treatment of ovarian failure are ineffectual. Gonadotrophic substances offer promise but as yet no commercial product will stimulate follicle growth or induce ovulation.

If tubal obstruction on both sides is apparent on x-ray examination and this is the only abnormal finding in both husband and wife, a course of diathermy and repeated tubal insufflations may effect patency. If this fails, then culdoscopy and plastic tubal surgery may be considered. The pregnancies from such procedures are rarely reported to be more than 10 per cent. These operations must be entered upon with full understanding by the patient of the possible hazards of abdominal surgery and the small chance of success. There is some promise that the use of polyethylene tubing may improve our present poor salvage rate in keeping diseased fallopian tubes open.

Much attention has been recently focused on the psychosomatic aspects of sterility; however, the objective measure of this factor is very difficult. There is no doubt that emotional conflicts can play a role in sterility. Typical examples are pregnancies that follow adoption or a good vacation away from home. It would seem that the most important psychotherapeutic role the attending physician can play is to induce a change of attitude whenever emotional tension is ascertained.

Discussion

The question is often raised "should the general practitioner be discouraged from handling the sterile couple." Many gynecologists feel the investigation is too detailed for ordinary workup. The great majority of infertile couples, at least in our state, consult the general doctor first and there is no reason why he cannot manage such couples if he has the interest and is willing to spend the time necessary for an adequate investigation. On the other hand, no matter whether he be surgeon, general practitioner, urologist, or gynecologist, if he has only a casual interest, it would be far better for him to refer the couple elsewhere for proper orientation, investigation and treatment. All too often the couple is treated with indifference and discouragement which leads to consulting doctor after doctor. Needless expense, effort and time will be spared if the first doctor orients them properly.

What can thorough study of the sterile couple do? It can provide a reliable opinion as to the prognosis of future conception with three possible answers:

1. The couple can be told there is nothing wrong and they should be able to achieve pregnancy.

2. When there is absolute sterility in the woman for which nothing can be done, treat-

ment is ended and the way is cleared for adoption. When there is irreparable sterility in the husband and the wife is relatively fertile, in suitable cases, donor insemination can be recommended.

3. The third answer may be that definite causative factors have been disclosed which may respond to treatment.

Twenty years ago only 15 to 18 per cent of sterile couples achieved pregnancy. Today with a better understanding of the physiology of reproduction and with the development of new diagnostic techniques a successful outcome is achieved in nearly twice as many barren couples.

Summary

An attempt has been made to present a systematic plan of management which is the culmination of a number of years of special interest in the childless couple. The problem is a common one, the solution of which requires a detailed study of both husband and wife. Such a study is rewarding in better prognostic evaluation and will produce a greater number of pregnancies. The over-all management is divided into orientation, investigation and treatment.

With few exceptions all young couples want children. It is important for them to know whether they can, cannot, or are unlikely to achieve pregnancy. The sooner the better. One year of trial before beginning the diagnostic survey is adequate. Both partners should be evaluated as a single biological unit and treatment directed at correcting all possible factors, large and small, in an effort to improve the combined fertility index of the marriage.

The infertile couple should not be told that the situation is hopeless, until everything has been exhausted. Indeed, an attitude of controlled optimism should be maintained. If after one year or more of treatment no pregnancy occurs, psychiatric help or adoption should be recommended.

MASSIVE UPPER GASTROINTESTINAL HEMORRHAGE

(Continued from Page 923)

versed. It is simpler to complete the operation by antecolic anastomosis.

Should the presence of duodenal ulcer and extensive inflammatory induration make invagination of the duodenal stump questionable, the Welch[4] maneuver is recommended. This is much safer than leaving or struggling with a questionable duodenal stump. Fatal bile peritonitis may readily result in a patient who has recently had a massive hemorrhage.

Drainage of the duodenal stump region, the line of anastomosis and meticulous wound closure and care are suggested. Evisceration may readily occur in a debilitated patient. In general, the improvement in the operative technique of gastric resection remains an avenue by which the mortality from acute massive bleeding from the upper gastrointestinal tract can be reduced.

In summary, acute massive upper gastrointestinal hemorrhage has been defined and the three general methods for its management indicated. The significant beliefs through which the optimum management may be selected have been recorded. These beliefs allow for the selection of patients for surgery. The surgery contemplated is 80 per cent gastrectomy with antecolic gastrojejunostomy. Such gastric surgery done under optimum conditions and with improved technique, salvages the patient and eliminates with satisfaction in a high percentage of patients, the threatening disease process. The restored patient is comfortable and productive, other factors permitting. The actual risk of the so-called conservative methods of treatment should not be underestimated.

636 Church Street

Bibliography

1. Stewart, John D.; Sanderson, George M., and Wiles, Charles E.: Blood replacement and gastric resection for massively bleeding peptic ulcer. Ann. Surg., 136:742 (Oct.) 1952.
2. Turnbull, George C., and Sagi, J. H.: Bleeding peptic ulcer. A report of 80 cases. Am. J. Digest. Dis., 6:92 (Apr.) 1939.
3. Welch, Claude E.: The treatment of acute massive gastroduodenal hemorrhage. J.A.M.A., 141:1113, 1949.
4. Welch, C. Stuart, and Yunich, Albert M.: The problem of surgery in the treatment of massive hemorrhage of ulcer origin. Surg., Gynec. & Obst., 70:662, 1942.

THE MINNESOTA MEDICAL PROFESSION AND TUBERCULOSIS

J. ARTHUR MYERS, M.D.
Minneapolis, Minnesota

TUBERCULOSIS has been one of the most serious problems of the Minnesota medical profession throughout the past one hundred years and it remains so today. When this Association was organized in 1853 tuberculosis was already rampant among the American Indians to whom it had probably been transmitted from 1659 on by explorers, fur traders, soldiers, et cetera.

Scarcely was Minnesota declared a territory when its citizens began to offer inducements to persons residing in eastern states and in Europe to join them. One of the outstanding enticements was the "salubrious climate" thought to have preventive and curative effects on consumption. Tremendous numbers of pamphlets recommending the climate of Minnesota for consumptives were printed in various languages and distributed widely in the eastern states, particularly New England, in Germany, Denmark, Norway, Sweden, Ireland and England. Soon consumptives and their families were arriving by way of the Mississippi river by boatloads, and later by trainloads. Among the large number of immigrants seeking cure from consumption in Minnesota were persons destined to become great, such as Henry David Thoreau and Edward Livingston Trudeau.

The blizzard of January 7, 1873, caused the Committee on Epidemics of the State Medical Association to announce briefly: "1. Minnesota air lost its vaunted prophylactic properties last winter and spring due to a very severe winter. 2. North and east winds from the Great Lakes were bad for consumptives."

Migration of consumptives to Minnesota began to decrease and by 1880, it was nearly over. Health seekers turned to the Southwest and Minnesota was almost forgotten in the rush to Arizona, Colorado, California and New Mexico. However, there were still thousands of consumptives and their families who had become permanent Minnesota residents and it seems probable that no one had escaped tubercle bacilli.

State Board of Health

With the influx of consumptives in addition to other diseases, Minnesota physicians were overwhelmed. Nevertheless they were alert and promptly developed everything of known value to aid in solving their problems. They felt the need of an official organization to control contagious diseases and therefore presented a bill to establish a State Board of Health in 1872—the third in the nation.

Since 1872 Minnesota has had a most efficient State Board of Health with particular interest in tuberculosis. It established a bacteriological laboratory in 1890. In 1892 it directed the first tuberculin testing in herds supplying milk to cities. In 1893 it offered tuberculin free of charge to local boards of health to be used by physicians and veterinarians in testing people and animals. In 1895 it began to make examinations of sputum for tubercle bacilli for physicians. In 1906 it required reporting of all cases of tuberculosis by attending physicians. In 1907 it required burial permits obtainable only on filing death certificates bearing the cause of death. Keeping a list of all reported cases of tuberculosis was begun in 1910. In 1918 a division of tuberculosis was established but was soon abandoned. However, in 1937, a new division of tuberculosis was created which is still in operation. The same year the State Board began to offer tuberculin ready for administration, to all physicians of the state. In 1945 it began to make photofluorographic surveys in various parts of the state.

Since 1872, Minnesota has had only four executive secretaries of its State Board of Health. Dr. C. M. Hewitt served from the beginning until 1897; Dr. H. M. Bracken, from 1897 until 1919; Dr. C. E. Smith from October, 1919, until October, 1920, and Dr. Albert A. Chesley for the past third of a century. Each of these four executive officers manifested great interest and became experts in tuberculosis control. Dr.

Read before the Centennial Meeting of the Minnesota State Medical Association as part of a Symposium arranged by the Minnesota Chapter, American College of Chest Physicians, Saint Paul, Minnesota, May 20, 1953.

Chesley's work in tuberculosis control is well known to all of us and we are agreed that no health officer anywhere or at any time has contributed more to the tuberculosis eradication program.

Dissemination of Information

Members of the medical profession early recognized that a well-informed public is essential for control and ultimate eradication of tuberculosis, therefore they recognized the need of organizations composed largely of nonmedical citizens to disseminate information about tuberculosis everywhere. The first organization of this kind was under the name, Anti-Tuberculosis Association of Willmar, in 1890. In 1903 the Associated Charities of Minneapolis established a Department of Tuberculosis. In 1906 a state organization was effected under the name, Minnesota Association for the Prevention and Relief of Tuberculosis. This is now known as the Minnesota Tuberculosis and Health Association. Each of the eighty-seven counties of Minnesota now has such an organization, most of which are components of the State Tuberculosis and Health Association. In the entire history of the state there has been no public health education program that has remotely approached in effectiveness that of these tuberculosis associations. These county organizations work in close co-operation with their local medical societies, and the State Tuberculosis and Health Association works in harmony with the Committee on Tuberculosis of the State Medical Association.

The funds for the operation of these various county associations are derived largely from the sale of tuberculosis Christmas Seals. This method of raising funds was introduced in Minnesota in 1908. It has increased in popularity so the total gross income to the eighty-seven counties was $712,476.86 in 1952. The percentage retained by each county depended upon the amount of effort required by local workers to raise the fund. In the three large counties where paid full-time staffs were employed, a much larger percentage was retained than in areas where the State Association did the bulk of the fund-raising work. In the state as a whole, 64 per cent was retained in the counties, 30 per cent was allocated to the operation of the state work, and 6 per cent was sent to the National Tuberculosis Association.

To one who has not analyzed the cost of tuberculosis in Minnesota, $712,476.86 seems like a large sum. However, it is a mere pittance when compared to over $8,000,000 expended in the operation of our sanatoriums alone in 1952. Thus the gross receipts from the sale of Christmas Seals in 1952 would be adequate to operate our sanatoriums slightly more than one month. When one includes the other costs of tuberculosis to the state, the amount of money raised and expended by the tuberculosis associations becomes a relatively small part of the total.

The Christmas Seal Sale fund has always been intended to promote educational work and was in no small way responsible for the building of sanatoriums, establishment of county public health nursing services and all of the other activities that have resulted in Minnesota's accomplishments. Its educational value is also indicated by the fact that per capita Minnesotans buy more Christmas Seals than any state except Delaware. As executive secretary for almost thirty years, Dr. E. A. Meyerding has developed this organization so it is recognized as the most outstanding Tuberculosis and Health Association in America.

Building and Operation of Sanatoriums

Through the leadership of H. Longstreet Taylor, Saint Paul, a campaign for construction and operation of sanatoriums was initiated in the early 1890's. This resulted in a few private, one state, and fourteen county sanatoriums. In addition, there has been a Veterans Administration Tuberculosis Division since 1927. In the tax-supported sanatoriums there have been approximately 2,500 beds available for tuberculous persons during the past quarter century. For a long time these beds were occupied for the most part by persons with contagious tuberculosis. Their isolation protected members of their families and communities against contagion. Thus the sanatorium has played a tremendous role in the control of tuberculosis in Minnesota. Physicians throughout the state deserve much credit for having so completely supported the sanatoriums.

Tuberculosis in Animals

Large numbers of tubercle bacilli were carried into Minnesota in the bodies of animals, particularly cattle, and therefore serious economic and public health problems were created. In 1885 the control of tuberculosis among cattle became a responsibility of the State Board of Health. This state was fortunate in having as one of its citizens, Dr. Charles E. Cotton, a young veterinarian, who had participated in the first tuberculin testing of cattle in the United States in the vicinity of Philadelphia in 1892. Early in the 1890's a tuberculin testing program was in operation in the vicinity of the Twin Cities and Duluth. In 1903 a State Livestock Sanitary Board was created and the responsibility for control of diseases among animals, including tuberculosis, was transferred to this Board. A memorable event occurred in 1903, when the herd of C. R. Brackett near Minneapolis, was accredited as modified tuberculosis free. This was the first herd to be so accredited in the United States.

In 1920 Dr. A. J. Chesley stated that there were 100,000 tuberculous cattle in Minnesota.

Although a large volume of tuberculin testing of cattle was done in the first two decades of the twentieth century, it was not until 1923 that the State Livestock Sanitary Board in co-operation with the United States Bureau of Animal Industry adopted a statewide tuberculosis eradication program with the county as the unit. Those counties in which tuberculin testing of all cattle revealed 0.5 of 1 per cent or less reactors and those which reduced the incidence of reactors to this level were designated modified accredited tuberculosis-free areas. The first counties were so accredited in 1925. All counties of the state had been accredited by December 1, 1934, and thus the entire state was designated a modified accredited tuberculosis-free area. Although this important goal had been reached, veterinarians were cognizant of the fact that a large volume of work remained before the eradication goal could be attained. Therefore they have continued periodic tuberculin testing of cattle and slaughter of reactors.

In 1898 the Minnesota State Medical Association invited Dr. M. H. Reynolds, Chief of the Division of Veterinary Medicine, University of Minnesota, to read a paper on bovine tuberculosis. He called attention to the importance of the tuberculin test in locating all animals which had this disease. In 1902 Dr. Reynolds said: "I would like to see the medical men of Minnesota take a very active interest in bovine tuberculosis." As the years passed this desire was fulfilled, as a number of physicians supported the veterinarians' tuberculosis eradication program wholeheartedly. In fact, William H. Feldman has represented the veterinary profession as *ex officio* member of the Committee on Tuberculosis of the State Medical Association since 1940. This is an exceedingly important relationship, since the bovine type of tubercle bacillus is highly pathogenic and causes great destruction in human tissues. This form of disease is contagious from animals to people, who in turn may pass it back to animals.

Committees on Tuberculosis

Although the reports of the State Medical Association and the State Board of Health abounded with reference to tuberculosis and its control, apparently it was not until 1894, that the president of the State Medical Association appointed a committee on tuberculosis. The next year this committee made an elaborate report and recommendations, many of which are good to this moment.

No record has been found of the existence of a committee on tuberculosis during the first two decades of the twentieth century. Probably this was because the officials of the organization were under the impression that adequate tuberculosis work was being provided by the State Board of Health and newly formed organizations, including the State Tuberculosis Sanatorium Advisory Commission, the State Board of Control and the Association for the Study and Prevention of Tuberculosis, since all of these organizations were working in close co-operation with the medical profession.

In 1924 a public health committee was appointed by the State Medical Association, one of whose members was responsible for tuberculosis activities. This member served in a liaison capacity between the State Medical Association and the Minnesota Public Health Association. In 1934 the Public Health Committee organized subcommittees, of which one was tuberculosis. This subcommittee was made a regular scientific committee of the State Association in 1941 and has since held numerous meetings each year and presented an annual report to the House of Delegates. The presidents of the State Medical Association have appointed the membership of

TABLE I. COUNTIES READY FOR ACCREDITATION WHEN TUBERCULIN TESTING IS COMPLETED

Aitkin
Anoka
Beltrami
Blue Earth
Brown
Carver
Cass
*Chippewa
Clay
*Cottonwood
Crow Wing
*Dakota
*Dodge
Douglas
*Faribault
Fillmore
Freeborn
Goodhue
Grant
*Houston
Isanti
*Jackson
Kanabec
Kandiyohi
Kittson
*Lac qui Parle
*Lake
*Le Sueur
*Lincoln
*Lyon
McLeod
Mahnomen
*Martin
Meeker
Mille Lacs
*Mower
*Murray
*Nicollet
*Nobles
Norman
*Olmsted
Otter Tail
Pennington
Polk
Pope
*Redwood
Renville
Rice
*Rock
Roseau
Scott
Sherburne
*Sibley
Steele
Swift
Todd
Traverse
Wabasha
Wadena
*Waseca
Washington
Winona
Wright
Yellow Medicine

*Already accredited.

the Committee in such a way that every organization in Minnesota having to do with tuberculosis as well as various groups in private practice were represented. This has made it possible for the Committee to study numerous tuberculosis problems and projects and to make recommendations to the Council only after the most careful consideration of all tuberculosis groups concerned.

On recommendation of the State Committee, a committee on tuberculosis was appointed in each of the thirty-four county and district medical societies in Minnesota. This was the first state to have tuberculosis committees in all of its societies. These committees consider various proposed projects for their respective counties and make recommendations to their societies. In this manner the local medical society keeps in close touch with and participates in the tuberculosis eradication movement.

Statewide Control Program

One of the first recommendations in 1940 was that the Medical Association develop a Minnesota statewide tuberculosis control program. It was recommended that physicians throughout the state employ standard fundamental procedures in diagnosis, treatment and prevention. The tuberculin test was recommended as the first step in diagnosis with x-ray inspection of the chest of all reactors, most detailed studies of those who presented shadow-casting lesions to determine etiology and treatment as indicated. It was also advised that all reactors without shadow-casting chest lesions be completely examined since 10 to 15 per cent of clinical lesions are extrathoracically located. It was recommended that every possible support be given the sanatoriums so that contagious cases might be isolated promptly and retained as long as their disease remained contagious.

It was felt that all surveys and other tuberculosis work should be in co-operation with local medical societies and that insofar as its members are willing, as much of the work as possible be done by them. The famous Meeker County survey initiated in 1941 was an excellent example. No physician or equipment was introduced from outside the county.

It was requested that every physician make a tuberculosis center of his office and search carefully for tuberculosis in each patient examined.

Accreditation of Counties

In 1940 the Committee on Tuberculosis developed qualifications whereby counties might be accredited with reference to tuberculosis control. This was in co-operation with the State Board of Health and the State Executive office. To qualify for accreditation a county must have an average five-year mortality rate of ten or less per 100,000 population. At least 90 per cent of all seniors in high schools must be tested with tuberculin with not more than 10 per cent reactors. Lincoln was the first county to qualify and received its certificate on December 11, 1941. On April 20, 1953, Lyon was the twenty-fifth county to be accredited.

The average mortality rate over the past five years ending in 1952, revealed that there were sixty-four counties in Minnesota with tuberculosis mortality rates of 10 or less per 100,000. This low rate gives each of these counties the first qualification for accreditation. For those not already accredited, it only remains to administer the tuberculin test to at least 90 per cent of the seniors in high school and to find that not more than 10 per cent react. These counties are listed alphabetically in Table I.

Over the years the Minnesota Tuberculosis and Health Association has done the lion's share in publicizing the program throughout the state and aiding medical societies in their work of qualifying for accreditation. If the physicians in the forty-two counties not yet accredited (Table I) but with mortality rates of 10 or less per 100,000 population will work closely and promptly with this Association in testing the seniors in high schools we could soon have sixty-four accredited counties.

In twenty-three counties there is a mortality rate of more than 10 per 100,000, as listed in Table II. Several of these counties should have rates of 10 or less per 100,000 within two years.

It now appears that within five years every county may have qualified for accreditation.

Certification of Schools

Minnesota physicians have supported the American School Health Association in its certification of schools program with reference to tuberculosis control work in progress. In fact, the first schools in the world to be so certified were in this state. The Minnesota Subcommittee on Tuberculosis (composed of three members of the State Medical Association) of the American School Health Association established qualifications by which schools could be certified. These qualifications include tuberculin testing of children and personnel as well as x-ray film inspection of the chests of all adults, including high school students and personnel who react. Those who are found to have shadow-casting lesions are immediately examined to determine etiology. This is rapidly spelling the doom of the tuberculous teacher, bus driver, janitor and other personnel members who in the past have so frequently spread tubercle bacilli to the children as well as fellow personnel. Our State Association can take great pride in the fact that already more than 1,500 schools have been granted certificates which are displayed on their walls. Many more schools are about ready to qualify and it now appears that within five years practically every school in the state will be certified with reference to tuberculosis work in progress.

Tuberculous Mentally Ill and Prisoners

Institutions for the mentally ill and the prisons were long infested with tuberculosis. Others contracted the disease there. Many persons entered these institutions with tuberculosis already established and contagious. The State Medical Association has offered every possible support to this problem with the result that nearly all mentally ill tuberculous persons are now housed in the H. A. Burns Memorial Unit at the Anoka State Hospital where they are receiving the most modern treatment, including chemotherapy and surgery. Excellent work is being done to control contagion.

TABLE II. COUNTIES NOT YET QUALIFIED FOR ACCREDITATION BY MORTALITY RATE

Becker	12.9	Marshall	19.8
Benton	13.8	Morrison	10.8
Big Stone	10.4	Pine	14.4
Carlton	15.0	Pipestone	13.1
Chisago	12.6	Ramsey	14.5
Clearwater	12.2	Red Lake	11.8
Cook	15.1	St. Louis	14.0
Hennepin	14.4	Stearns	11.3
Hubbard	12.7	Stevens	12.6
Itasca	10.4	Watonwan	10.1
Koochiching	16.7	Wilkin	11.4
Lake of the Woods	16.1		

Incorrigible and recalcitrant tuberculous persons still constitute a serious problem. They cause sanatorium management and the patient body a great deal of trouble. They leave institutions against advice and disseminate turbercle bacilli wherever they go. For many years the Committee on Tuberculosis of the State Association has strongly recommended that provision be made for incarceration of such individuals. Though sincere efforts have been made, the problem has not been adequately solved. There is now the possibility of satisfactory facilities being provided at the Anoka State Hospital in conjunction with the H. A. Burns Memorial tuberculosis unit.

General Hospitals and Tuberculosis

Until recently many tuberculous persons were admitted to our general hospitals, both private and public, for various well diagnosed conditions who also had unsuspected contagious tuberculosis. They disseminated tubercle bacilli to fellow patients and personnel, including students of nursing and medicine. Since 1940, the Committee on Tuberculosis of the State Medical Association has strongly recommended that each hospital in Minnesota require a careful examination for contagious tuberculosis of every admission, and that pre-employment examinations be required of personnel, and persons be examined periodically while in the employ of an institution. This had already been in effect with remarkable success in a few hospitals, including that of the University of Minnesota since 1936. St. Joseph's hospital, Saint Paul, was the first private institution to establish such routine examinations on a permanent basis. This was done in 1951. At this moment a sizable number of hospitals have adopted such a program and it now appears that within a year or so it will be routine in every hospital in Minnesota.

Since tuberculosis has become compensable, no hospital can afford to neglect routine examinations of entering patients and members of personnel. The State Association has long contemplated and probably soon will issue certificates of recognition of accomplishment of this activity which can be displayed by the institution.

Every institution that has adopted this routine procedure has found it profitable in bringing to light not only unsuspected cases of tuberculosis, but other previously unknown diseases such as malignancy. It now appears that Minnesota may be the first state to have this routine procedure adopted by all of its hospitals.

Since the tuberculin reaction is a more delicate criterion of the presence of tuberculosis than the x-ray film, every person entering a hospital should have the tuberculin test administered. It is important that every patient as well as his physician knows whether his body harbors tubercle bacilli as manifested by the tuberculin reaction. If so, he is a potential case of clinical tuberculosis despite the clarity of his chest by x-ray film at the moment. He should be warned of this potentiality and advised to be examined periodically in order that any lesion destined to evolve to gross proportions may be found while in the "silent stage."

It is also important that the tuberculin reacting status of all employes be known. Therefore the test should be administered as a part of the pre-employment examination and periodically thereafter for those who do not react. All reactors should have x-ray film inspection of the chest and complete examination each six months. This is the only satisfactory method of determining whether employes become initially infected with tubercle bacilli during their period of employment. Knowledge of the reaction to tuberculin determined on pre-employment or thereafter is of great value in determining liability in event of litigation. It is also important from the standpoint of the patient who may claim the hospital is liable for having transmitted infection.

Phenomenal Accomplishment

In no place or time in the history of the world has the result of efforts against tuberculosis been as phenomenal as in Minnesota. The rapidity with which this accomplishment has been achieved is almost unbelievable. Veterinarians and their allies have almost eradicated tuberculosis from the cattle herds. They have reduced the incidence of infected cattle to 0.02 per cent. Thus only one in 5,000 cattle reacts to the tuberculin test. The search for the infected bovine is almost like that for the proverbial needle in a haystack. As the disease was practically driven from cattle, there was a corresponding decrease in mortality, morbidity and tuberculous infection among people.

When the Gillette Hospital for Crippled Children was constructed and for some time thereafter, it is said that approximately one-half of all the crippling among children and young adults of this state was due to tuberculosis. Now it is estimated that only about 3 per cent of such crippling in these age periods is due to this disease. Tuberculosis of the cervical lymph nodes once so prevalent has now become relatively rare. There is good reason to believe that the practical elimination of the bovine type of tubercle bacillus from the environment of children and young adults has played an important role in the rapid and marked decrease of these forms of tuberculosis. In parts of the world where tuberculosis has not been well controlled among animals, 50 per cent or more of the cases of tuberculosis of the skin and cervical lymph nodes are due to the bovine type of bacillus. This is also true of 20 per cent of the cases of bone and joint disease as well as organs of the genitourinary system and 25 per cent of acute fatal forms, including meningitis and miliary disease. In Minnesota it has become rare for persons to become infected through association with or by consuming the products of cattle. There is much greater likelihood of cattle becoming infected from people. A considerable number of such cases have already been reported. Thus by almost eradicating tuberculosis from the cattle of this state veterinarians have nearly solved a large economic problem and tremendously reduced the incidence of tuberculosis in people.

Control of tuberculosis among people in Minnesota has far exceeded the most pleasant dreams and the fondest hopes of the pioneers of the '90's and the early 1900's. Tuberculosis mortality in Minnesota reached its height in this century in 1911 with 2,522 deaths, a rate of 119.7 per 100,000 persons. With the educational campaigns, completion of the sanatorium programs, active and extensive participation of physicians in their offices, the veterinarians' eradication campaign and other projects the mortality rate began to tumble. For the first time it reached less than 100 per 100,000 in 1919, less than 50 in 1930, less than 25 in 1946, and precipitously declined to 6.6 with only 205 deaths in 1952.

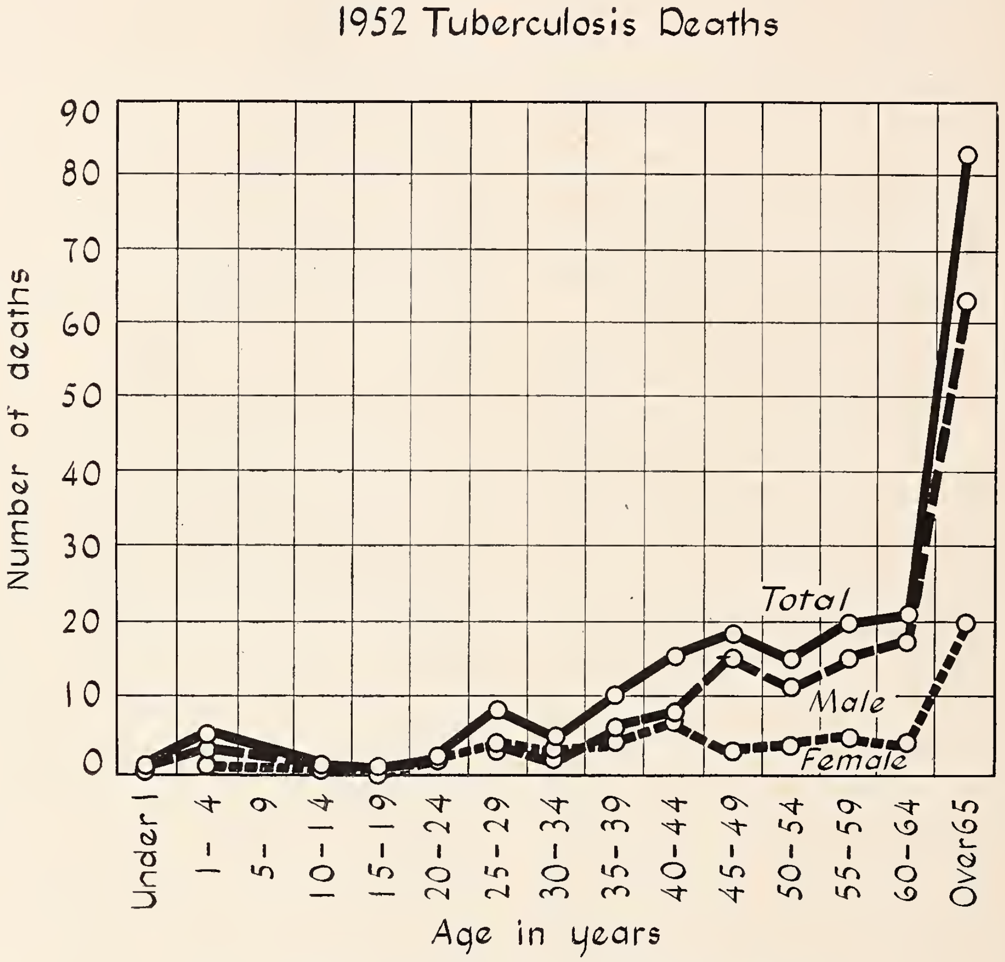


Fig. 1. Deaths from tuberculosis in Minnesota in 1952.

In this entire state of approximately 3,000,000 people, only one baby died from tuberculosis in 1952. This is in contrast to sixty-eight deaths among babies in 1916. From birth to fifteen years only six children died in this state in 1952 in contrast to 275 in 1916. (Fig. 1) In the teen-age period (ten to nineteen years) only two died in the whole state in 1952, whereas 268 in this age period died in 1916. In the age group twenty to forty-nine years, only fifty-nine persons died in 1952. Of the 205 deaths in Minnesota in 1952, 139 (67.8 per cent) were fifty years or older, and eighty-three of these were sixty-five or older.

The majority of deaths from tuberculosis in Minnesota are occurring among persons in the later decades of life. These are the persons born in the '70s, '80s and '90s, when tuberculosis was rife both among people and animals, and when few escaped invasions of tubercle bacilli. This generation has paid a terrible price. They filled the sanatoriums to capacity and provided a long waiting list for sanatorium beds. They died in large numbers. The survivors who are now fifty or more years old are still paying the price in illness and death. (Fig. 1) For the most part, they are falling ill and dying from the progeny of tubercle bacilli which entered their bodies prior to 1900 and which have since lurked there in residual, necrotic and caseous lesions. Those under fifty have benefited by the protection afforded them from tubercle bacilli. This protection has been continuously improved over the past fifty years so that it has approached the absolute for the children and young adults of this state. Hence death has become a rarity in this age period.

Among the 139 persons who died from tuberculosis in 1952 at the age of fifty or older, 106 (76.3 per cent) were men. (Fig. 1) A similar preponderance of deaths among men has been observed throughout this country. The cause is not known.

Over the five-year period ending in 1940, 15,510 cases of tuberculosis among residents of Minnesota were reported to the Health Department. This was a case rate of 105.7 per 100,000 population. During the five years ending in 1952, 12,431 cases were reported, a case rate of 83.4 per 100,000. Thus it appears that the number of cases has not decreased in proportion to the number of deaths. These figures are misleading since they are not entirely comparable for the two five-year periods. From 1936 to 1940 most persons reported as tuberculous had sought examinations in the offices of their physicians and in clinics because of symptoms. During the 1940's, intensive statewide case-finding programs were in operation and have been continued, with the result that between 1948 and 1952 a large number of cases of tuberculosis were reported whose lesions were found in the presymptom stage. Obviously if the same case-finding effort had been in vogue between 1936 and 1940, numerous presymptom cases would have been found, which would have brought the total far beyond 15,510. Likewise if between 1948 and 1952 only persons had been reported who had symptoms, the total number would have been far less than 12,431. Therefore there is good reason to believe that there has been a much more marked decrease in the case rate than the reported cases indicate.

In this discussion factors which have been introduced since 1940 must be considered. One pertains to displaced persons who have developed clinical tuberculosis in considerable number; another to war veterans of World War II and the Korean War. A third factor is the precipitous decline in mortality since 1947, at least partially due to suppressive effects of streptomycin, para-aminosalicylic acid and isonicotinic acid hydrazid. These drugs have caused mortality rates to decrease faster since 1947 than morbidity rates. The permanence of the effectiveness of these drugs has not yet been determined.

A Gigantic Problem Lies Ahead

Despite the phenomenal accomplishment in controlling tuberculosis, the most difficult part of the course to the eradication goal lies ahead. Tuberculosis is a contagious disease. Most of our work among people in the past has been devoted to gross lesions, relatively easily diagnosed but treated with limited success. The time has arrived when we must give more thought to the cause of tuberculosis and concentrate our efforts on the tubercle bacillus long before it has produced gross lesions detectable by x-ray shadows.

Veterinarians have long known that tuberculosis unmolested in cattle doubles itself every fifteen years. They have also long been aware of the fact that every animal that reacts characteristically to tuberculin regardless of apparent good health has tubercle bacilli-containing lesions and therefore is a potential disseminator of these organisms. Long ago they stopped seeking just the animals with evidence of clinical disease but sought diligently for all with tubercle bacilli in their bodies as manifested by the tuberculin test.

Although the incidence of tuberculin reactors among cattle in Minnesota is now only one in 5,000, veterinarians recognize that a tuberculosis problem still exists. Therefore they test the entire cattle population (about 3 million) with tuberculin every six years. They will not consider their job finished as long as they find a single reactor. Concerning this, A. G. Karlson, D.V.M., recently said: "An animal that reacts positively to the tuberculin test is properly considered as a dangerous individual . . . In spite of the great advances in control there is a constant potential hazard as long as only a few infected animals exist."

Mortality and morbidity rates are not the best criteria of the tuberculosis problem. The only dependable criterion is the incidence of individuals who harbor tubercle bacilli since each such person is a potential case of clinical contagious tuberculosis. The physicians of Lincoln and Lyons counties with the co-operation and support of the Minnesota Tuberculosis and Health Association and the State Board of Health have recently conducted countywide demonstration surveys to determine the incidence of persons who harbor tubercle bacilli as manifested by the tuberculin reaction. In each county it was found that approximately 30 per cent of those tested were tuberculin reactors. The percentage was exceedingly low among the children and young adults, but reached its height among the older persons who were not protected against tubercle bacilli of either the bovine or human type during their infancy and childhood. These individuals still carry residual tubercle bacilli-containing lesions. To keep these reactors examined with sufficient frequency so that those who develop clinical lesions will be found before they are ill or contagious constitutes a considerable task for the physicians of those counties. However, it is the only known method of eradicating the disease. This must be done in the remaining eighty-five counties in the state if we are to proceed as rapidly as possible toward the eradication goal. Tuberculosis will not be eradicated from Minnesota as long as a single tuberculin reactor remains.

In addition to keeping the present tuberculin reactors under close surveillance all nonreactors should be tested with tuberculin periodically. We are in the dawn of the day when chemotherapy may actually sterilize the body of tubercle bacilli if administered sufficiently early after the initial invasion. When an individual converts to a reactor and for some time thereafter the lesions are usually small and vascular. A germicidal drug administered at that time might be expected to destroy all tubercle bacilli, whereas if one waits for lesions to become large and dense enough to cast x-ray shadows their vascularity has been so decreased that it may be difficult, if not impossible, for a drug in the blood stream to reach the tubercle bacilli in caseous and necrotic masses.

Present-day diagnostic armamentarium makes it easy to find every person whose body contains tubercle bacilli. Moreover, present-day therapeutic armamentarium enables the physician to treat gross lesions about as soon as they become detectable by x-ray film inspection so successfully that they do not become contagious.

The greatest danger of the Minnesota medical profession failing to attain the tuberculosis eradication goal is a sense of false security due to the marked decrease in mortality and morbidity. We have nearly reached the halfway mark. The remainder of the way to the eradication goal is long, tedious, and difficult, but I have full confidence that it will be reached by the Minnesota medical profession and its allies.

MALE STERILITY

(Continued from Page 937)

showing more and more interest in the results of such studies when selecting families for homeless children.

For the busy practitioner, plagued with male sterility problems, it is recommended that at least one carefully executed sperm count be done, and delay specific classification of a patient until repeated counts are done. Since reliable spermatogenic drugs are not available, medication given for psychic or tonic value should not be continued too long, for if one partner is sterile, and adoption could be considered, the earlier the better for the couple concerned. Avoid prognosis, inasmuch as extreme oligospermia may be capable of causing pregnancy. Psychosomatic factors are also assuming ever greater importance, and should be mentioned when discussing the problem with a childless couple.

EXTRAPULMONARY INTRATHORACIC TUMORS

Clinical Manifestations and Surgical Treatment

STUART W. HARRINGTON, M.D.
Rochester, Minnesota

I AM PLEASED to discuss with you some of the clinical and surgical considerations of intrathoracic tumors as I have been interested in the surgical treatment of these lesions for more than twenty-five years. In this paper I will discuss primarily extrapulmonary tumors. The first tumor of this type which I removed surgically was in 1925. In this paper I am reporting on the series of 212 patients on whom I have operated for this type of tumor to the present time. During the period covered, knowledge of the different histologic types of tumor that occur within the thorax, methods of establishing a diagnosis and methods of treatment have improved markedly. However, even though all of the present methods of diagnosis are utilized, these tumors still present many problems in regard to the establishment of a definite clinical diagnosis and the determination of the type of treatment to be instituted.

Early recognition of these growths before they have made serious inroads on the patient's general condition has been of inestimable aid to their surgical removal and to the final result. Study of proved cases of intrathoracic extrapulmonary tumors has given a different conception of the type of lesion found in the thorax and of the prognosis than was held formerly. The older belief was that most intrathoracic growths were malignant and that only conservative treatment was justified because surgical treatment was a hazardous procedure. The lack of response of many of these tumors to conservative treatment encouraged surgical intervention with a view to complete removal of the growth, and the marked advancement in surgical technique has made operative removal a relatively safe procedure. Microscopic study of the lesions removed has shown that a large percentage of intrathoracic tumors are benign.

The incidence of these growths is probably no greater now than it has ever been. However, interest in the diagnosis and treatment of these tumors has increased in recent years because their presence is being recognized more frequently. One of the principal reasons for this more frequent recognition is the present use of routine roentgenographic examinations of the thorax, regardless of whether or not the patients present symptoms which are referable to the thorax.

For many years the medical profession has carried out roentgenographic examinations on patients who seek medical attention for some definite complaint but only in recent years has it been done as a routine diagnostic procedure on mass groups of people who have no definite complaint. When an abnormal condition which is indicative of the presence of a tumor is shown in a routine roentgenogram, it is important that complete roentgenologic and physical examinations be made to determine the type of lesion.

All intrathoracic tumors should be considered potentially malignant. The increased number of benign tumors seen in recent years is due to early recognition and their removal before they have undergone malignant change. Tumors that remain benign often attain great size and may cause death from mechanical pressure on the important structures in the thoracic cavity which are adjacent to the tumor. Because of the potential malignant character of these tumors and their close proximity to the important structures contained within the thorax, it is of paramount importance that tumors in this region be recognized early and that treatment be instituted immediately before the growth has become malignant and metastasized or has caused serious and permanent injury from pressure to the vital structures within the thorax.

Anatomic Situations

From a study of the types of tumor in which the diagnosis has been proved by histologic examination of surgically removed tissue, it has been found that the position of the tumor in the thoracic cavity is of great value in suggesting

---

From the Division of Surgery, Mayo Clinic, Rochester, Minnesota.

Read at the Centennial Meeting of the Minnesota State Medical Association, as part of a Symposium arranged by the Minnesota Chapter, American College of Chest Physicians, Saint Paul, Minnesota, May 18 to 20, 1953.

the type of tumor present, for certain types of lesions are more likely to occur in certain locations than in other locations.

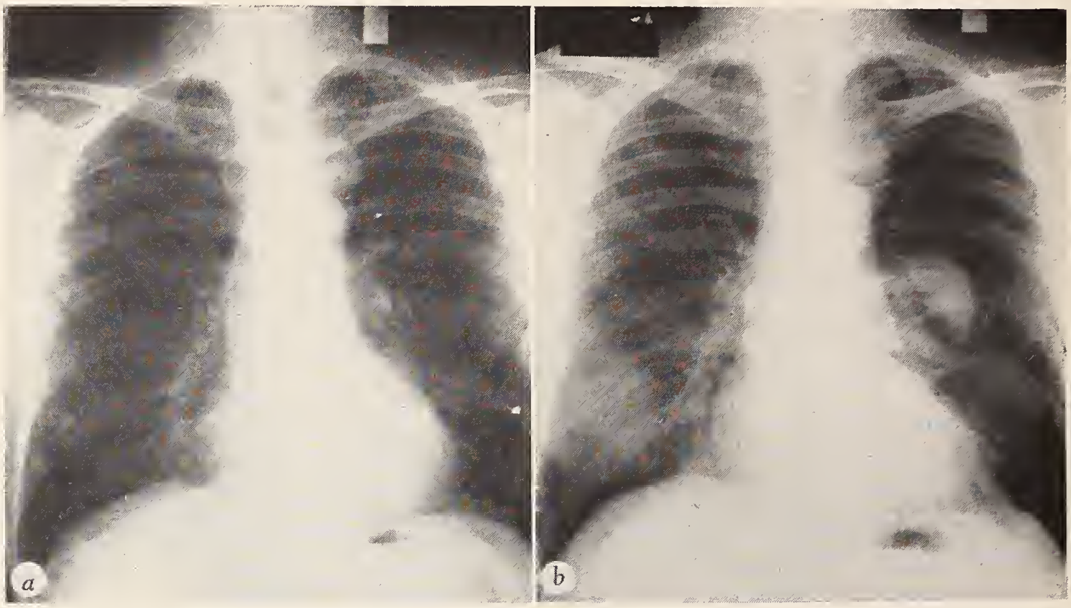


Fig. 1. Neurofibroma of left vagus nerve and left recurrent laryngeal nerve in a man aged forty-five years. Chief and only symptom was husky voice of four years' duration. Examination of vocal cords showed paralysis of left cord. *a.* On admission: rounded tumor at anterior mediastinum extending above arch of aorta. *b.* After artificial pneumothorax with collapse of left lung for better visualization of the tumor on, and extending above the arch of the aorta (roentgenoscopic examination revealed transmitted pulsation).

Anterior Portion of the Thorax.—In a general way, it may be stated that the types of tumors most frequently encountered in the anterior part of the thorax are the various types of teratoid neoplasms, mesodermal, entodermal and ectodermal (dermoid cysts), but these tumors also occasionally occur in the posterior mediastinum. Other lesions most frequently found in the anterior part of the thorax are thymic tumors, cystic tumors, lipomas, fibromas, intrathoracic adenomatous thyroids and various types of connective tissue tumors.

Posterior Portion of the Thorax.—The tumors most commonly located in the posterior portion of the thorax are perineural fibroblastomas, such as neurofibromas from the thoracic spinal root nerves. These tumors may extend through intervertebral foramina into the spinal cord and are often called "dumbell" or "hourglass" tumors. Perineural fibroblastomas also may occur along the course of the intercostal nerves in the lateral portion of the thoracic wall. The posterior mediastinum also contains the sympathiconeurofibromas and gangliomas. Other lesions found in this region are granulomatous lesions of the mediastinal lymph nodes or hilum of the lung, tumors of the esophagus, mediastinal cysts and occasionally bronchogenic cysts.

Middle of the Thorax.—The lesions most commonly seen in the middle of the thorax are the lesions of the great vessels, cardiac lesions, aneurysms and lymphoblastomas. Distinction of lesions in this location require the greatest care from a surgical standpoint, because many of them are not amenable to surgical treatment although some can be treated surgically.

Superior Portion of the Thorax.—Distinction of tumors of the superior part of the thorax often is difficult (Figs. 1 and 2) because they frequently fill the entire space, so that it is difficult to determine the relationship to the surrounding viscera. The tumors most commonly located in this region are thymomas, intrathoracic goiters, neuroblastomas, aneurysms, cystic lymphangiomas, cystic azygos lobes as well as tumors of the upper lobe of the lung (sulcus tumors).

Lower Portion of the Thorax.—The lesions most commonly found in the lower part of the thorax above the diaphragm are cystic or solid tumors associated with the pericardium, tumors or diverticula of the lower part of the esophagus and lesions of the diaphragm which may simulate intrathoracic tumors. These consist of tumors of the diaphragm, subcostosternal hernias (foramen of Morgagni) containing omentum only, or hernias of the liver through the dome of the right side of the diaphragm.

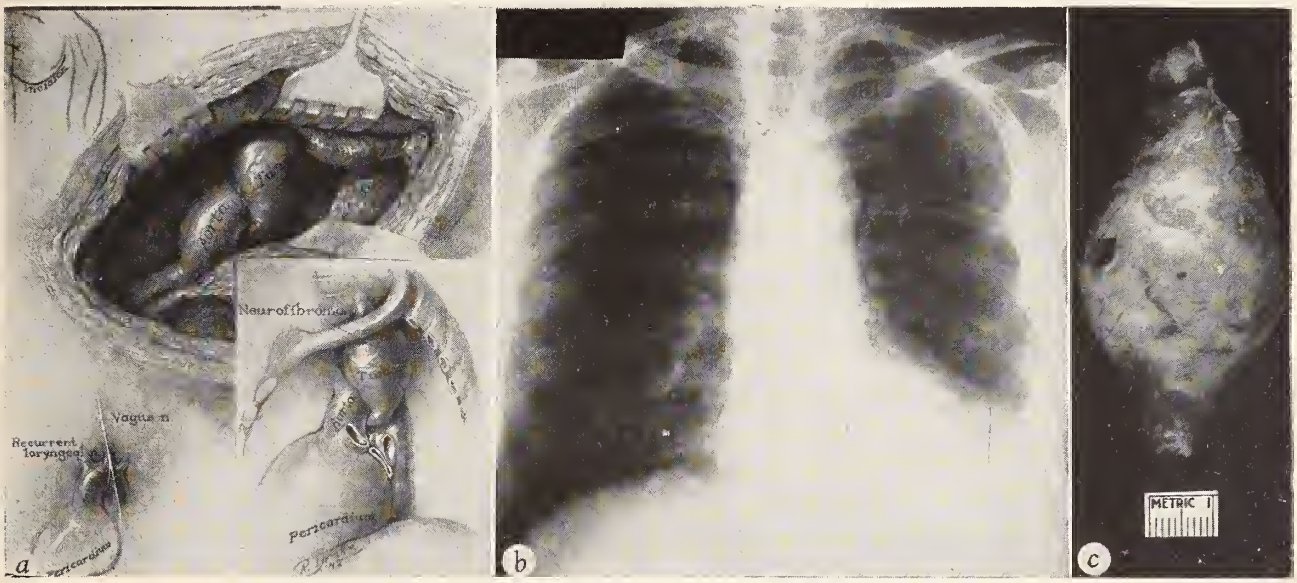


Fig. 2. Same case as in Figure 1. *a.* At operation: left transpleural complete removal of the tumor of left vagus and left recurrent laryngeal nerves. *b.* Three weeks after operation. *c.* Neurofibroma measuring 6.5 by 3.5 by 3 cm. Small portion of the normal vagus nerve in upper pole of tumor.

Roentgenologic Factors

When an abnormal condition which is indicative of the presence of a tumor is shown in a routine roentgenogram, it is important that complete roentgenologic and physical examinations be made to determine the type of lesion. This should be done regardless of whether or not the condition has caused any symptoms because early diagnosis and immediate institution of treatment are of the utmost importance in the treatment of these tumors.

From a roentgenologic standpoint, it must be kept in mind that many different types of tumor in various locations in the thorax and mediastinum have similar roentgenologic manifestations, and a definite diagnosis often cannot be established even after utilization of all the different roentgenologic means, such as roentgenoscopy, angiocardiography and examination of the esophagus and stomach after the patient has ingested barium, to rule out the possibility of a lesion of, or impingement on, these structures. In many instances after utilization of all methods of thoracic diagnosis, such as bronchoscopy, esophagoscopy, examination of sputum for malignant cells or organisms and so on, a definite preoperative diagnosis cannot be established.

Symptoms

One of the important features of extrapulmonary intrathoracic growths is that they may cause no symptoms. The absence of symptoms is rather common for benign lesions and also for early malignant lesions. However, many of these lesions do present some clinical manifestations and the symptoms, when present, vary depending on the type of intrathoracic tumor as well as on the duration and location of the tumor in the thorax.

Tumors situated in the anterior mediastinum as a rule cause more symptoms than those situated in the posterior mediastinum, because of the small space in which they are confined and their proximity to the lung. This is true whether the lesion is benign or malignant. Pain is one of the most important symptoms of these growths. Anterior mediastinal tumors usually are accompanied by pain, whether they are benign or malignant, but the pain of benign tumors is of a different character and is never so severe as that associated with malignant lesions.

When the lesions are benign, the patients have a sense of pressure beneath the sternum, usually associated with dyspnea and cough on physical effort. These symptoms are progressive and are

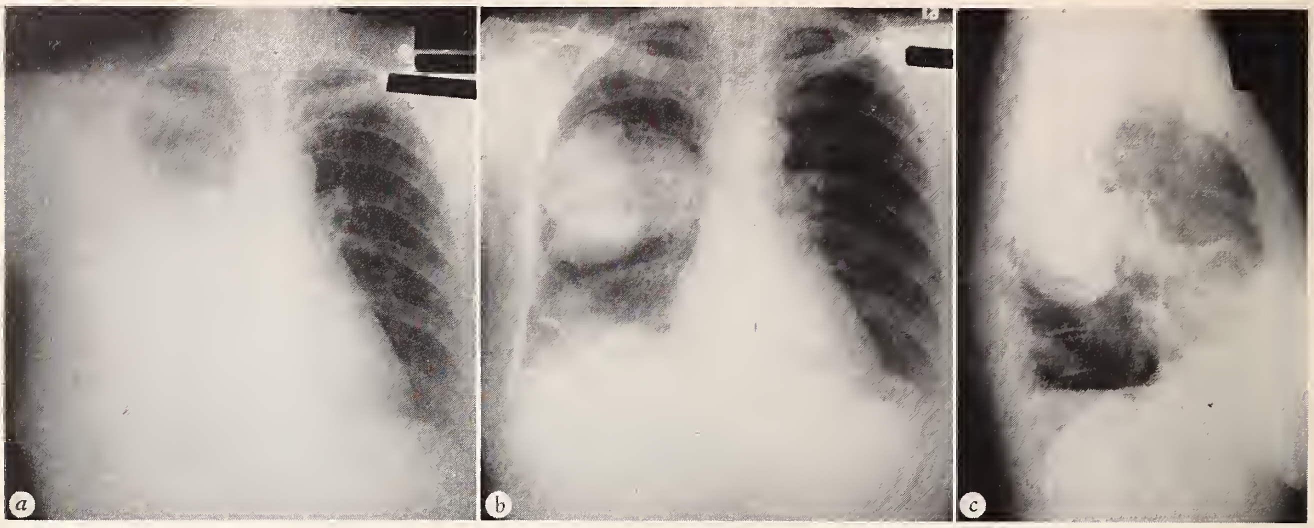


Fig. 3. Fibrous mesothelioma from parietal pleura of right posterior part of chest wall in a woman fifty-three years of age. Chief complaint was dyspnea of nine months' duration. Two years previously mobile x-ray unit reported tumor in right lung. *a.* On admission: extensive right pleural effusion. *b.* and *c.* After pleuracentesis; 1,800 cc. of clear fluid removed; large posterior tumor in right mid lung field.

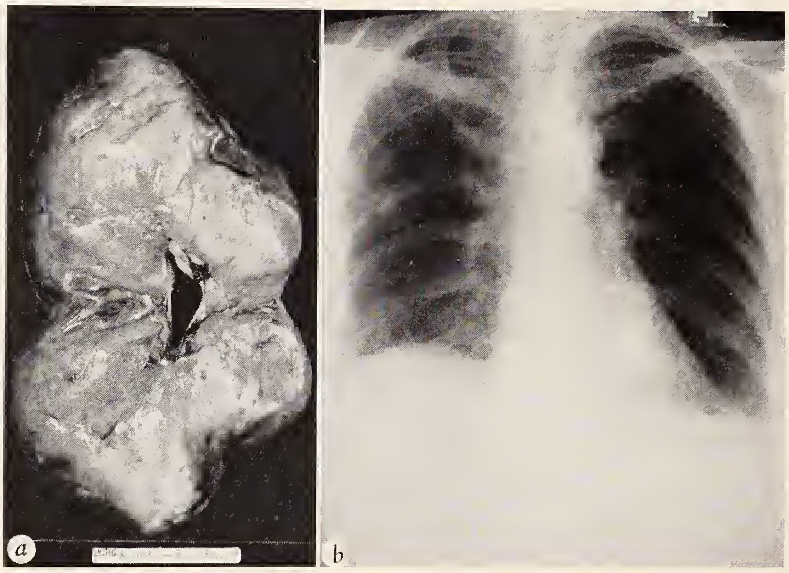


Fig. 4. Same case as Figure 3. *a.* Fibrous mesothelioma measuring 10.5 by 9 by 6 cm. from the parietal pleura of the right side of the thorax. *b.* Following complete transpleural removal of tumor. Right lung fully expanded. No pleural effusion.

associated with, and augmented by, inflammatory lesions of the respiratory tract. These tumors are commonly diagnosed at first as pulmonary or pleural lesions, such as pleurisy, pneumonia or influenza. When anterior mediastinal tumors are malignant, the pain is usually more severe; at first it occurs periodically and is noted mostly at night. It gradually becomes more or less constant until sedatives are required for relief.

Posterior mediastinal tumors may be benign or malignant. Benign tumors in this location are the most silent tumors that occur within the thorax. The outstanding clinical features are relatively few, and only mild symptoms may be associated with large growths, for these tumors may fill practically the entire hemithorax without producing any marked symptoms other than dyspnea on exertion (Figs. 3 and 4). In some instances neurologic symptoms consisting of varying degrees of paralysis are associated with tumors in this region particularly when tumors are neurogenic, such as dumbbell tumors which extend into, and cause pressure on the spinal cord, or gangliomas which are common in the superior mediastinum and may cause Horner's syndrome or anhidrosis. When tumors situated in this region are malignant, or have undergone malignant change, relatively small growths are associated with severe pain; the patient's chief complaint then is of the pain.

Dyspnea and other clinical manifestations are usually more marked when the tumor is situated in the superior mediastinum, because in this region the growth not only produces pressure on the lung itself, but in many instances it causes direct pressure on the large bronchi and on the hilus of the lung; at times, also, it exerts pressure on the trachea and thus causes marked interference with respiration, particularly on exertion. These tumors also may compress the esophagus causing difficulty in swallowing.

The clinical manifestations of intrathoracic tumors are often meager and rarely pathognomonic, although when present, they are of value when correlated with the roentgenologic findings in the establishment of a final diagnosis and in the selection of the type of treatment. Even after correlation of the results obtained by application of all the modern diagnostic methods for thoracic lesions, it is often impossible to determine clinically the type of lesion that is present or whether the tumor is benign or malignant.

Surgical Indications and Procedures

Extrapulmonary intrathoracic lesions for which surgical treatment is advisable may be divided into two groups from a clinical standpoint: (1) those that are causing symptoms, and (2) those that are not causing symptoms and are found on routine roentgenologic examination. For the first group, surgical treatment is a generally accepted tenet and when indicated should be carried out without delay. Concerning the second group, there may be some difference of opinion as to whether surgical treatment is indicated immediately or whether the patient should be kept under observation. This latter group presents one of the more important problems associated with intrathoracic lesions at the present time because of the relatively frequent finding of symptomless lesions on routine roentgenographic examinations. Each lesion must be dealt with individually; the manner depends on the findings.

Every effort should be made to establish a definite clinical diagnosis but in many instances this cannot be accomplished. When the roentgenographic findings are those of an indeterminate lesion which cannot be differentiated from a malignant lesion, I believe that exploratory thoracotomy should be performed and tissue should be removed for histologic diagnosis. The risk of exploratory thoracotomy is very small owing to the marked improvement in technical surgical methods and preoperative and postoperative measures, and, in my opinion, is much less than would be associated with delaying treatment for a malignant lesion. In those cases in which exploratory operation is required to establish a diagnosis, if the lesion is found to be a surgical condition, the complete operation indicated should be carried out at that time.

The methods of approach to, and the types of operative procedures for, extrapulmonary intrathoracic growths depend on the site of the tumor, its extension within the thoracic cage and the presence of complications which may have been produced by the growth. In each case the surgical procedure must be selected individually on the basis of the indications. A few general principles apply in all cases. Some of the more important are the selection of the location and method of approach through the thoracic wall which will give the greatest exposure of the tumor with the minimal amount of trauma and removal of normal structures of the thoracic wall. These are necessary so that at the completion of the operation, the thoracic wall can be reconstructed completely in order to restore the normal relations of the thoracic viscera and give the minimal amount of deformity of the wall.

The more important factors related to removal of the tumor are early operation, complete removal of the tumor at the time of operation and repair of any damage to surrounding structures which may have been caused by the presence of the tumor or its removal from these structures.

As said before, the approach to intrathoracic tumors varies according to their location. Tumors located anteriorly may be approached through the anterior or posterior wall of the thorax. I prefer the posterior approach, particularly when the tumor projects into either pleural cavity. The posterior approach gives much greater exposure than the anterior approach, and it permits dissection under direct vision of the tumor from the important structures to which it may be adherent. These usually are the heart, the great vessels and the lungs. Furthermore, any injury to these structures caused by the tumor or operative procedure can be detected and repaired immediately.

If the tumor is small and is confined to the anterior or superior mediastinum, or if it has ruptured into the lung anteriorly, the growth may be more accessible if approached anteriorly. This may be achieved by splitting the sternum or removing the cartilage and turning back the wall of the thorax. In some instances such tumors can be removed extrapleurally through an anterior type of incision, whereas the operation is transpleural when the posterior approach is used.

For tumors situated in the posterior portion of the thorax, a posterolateral incision is made around the vertebral border of the scapula. The entrance into the thoracic cavity is made by partial resection of one rib, over the most central portion of the tumor and when greater exposure is required, resection of 2 cm. of the ribs above and below is usually adequate to permit removal of even very large tumors.

Tumors situated in both the posterior mediastinum and spinal cord are removed after posterior mediastinotomy and laminectomy. This operation may be done in one or two stages. If the tumor is removed in two stages, the intraspinal portion of the tumor should be removed first after laminectomy to minimize the danger of permanent damage to the spinal cord from pressure caused by edema of the tumor or hemorrhage into the spinal canal. The mediastinal portion of the tumor usually can be removed by posterior mediastinotomy and excision ten to fourteen days later. The two-stage procedure is usually indicated when the mediastinal portion of the tumor is large because collapse of a large amount of lung and other intrapleural complications may greatly increase the operative risk.

When the mediastinal portion of the tumor is small, the two procedures may be done at one time through two separate incisions. The laminectomy is done first to expose the intraspinal portion of the tumor and then posterior mediastinotomy is done with complete removal of both portions of the tumor through the mediastinum. This one-stage procedure is preferable in selected cases because any possibility of leaving a portion of the tumor is avoided, hemostasis can be more accurate, and in some cases the mediastinal portion of the tumor can be removed extrapleurally.

The most inaccessible intrathoracic tumors are those located in the upper portion of the thoracic cavity between the first and the sixth ribs posteriorly, because these ribs are covered by the scapula. Tumors located posteriorly and some located anteriorly can be satisfactorily removed after elevation of the scapula and posterior removal of the fourth rib (Figs. 5 and 6).

After the tumor has been removed completely, any injury to surrounding structures should be repaired and all bleeding points should be ligated carefully. Any raw surface produced by removal of the tumor should be covered as much as possible with pleura. The pleural cavity is then irrigated with physiologic saline solution to remove any particles of tissue or blood clots, the lung is fully inflated by increasing the positive pressure, and 240,000 units of penicillin is placed in the pleural cavity. Then the incision is closed. The pleural cavity is drained by airtight or closed type of drainage with a 22 French catheter and application of gentle suction to the catheter. Institution of closed drainage is usually through the posterior portion of the periosteum of the rib which has been resected or if this is not an adequate position for drainage of the pleural cavity, a closed type of intercostal drainage is instituted posteriorly through the eighth interspace. In this way the bloody serum, which may collect after removal of intrathoracic lesions, is drained. The immediate drainage of this bloody serum permits rapid and complete re-expansion of the lung. Drainage rarely continues for more than forty-eight or seventy-two hours at which time the drainage tube may be removed.

Respiratory difficulty is the most serious immediate complication after operation and should be relieved entirely before the patient is taken from the operating room. The trachea and bronchi should be aspirated through the intratracheal tube before it is removed. If excessive mucus is present, bronchoscopic aspiration should be performed before the patient is removed from the operating room. Roentgenograms of the thorax and upper part of the abdomen should be made while the patient is still on the operating table; exposed films should be developed immediately and read before the patient is removed from the operating room. If roentgenograms of the thorax show evidence of pulmonary congestion or collapse of the lung, immediate measures should be taken to correct the condition, and further roentgenograms should be taken and read before the patient is returned to his hospital room.

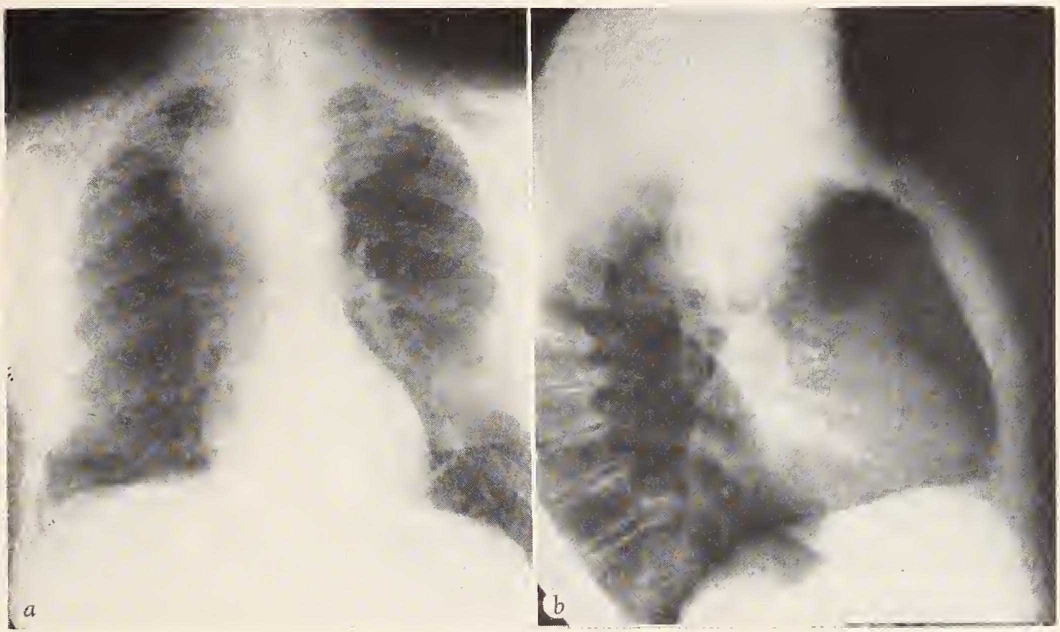

a
b

Fig. 5. Intrathoracic adenomatous thyroid in a man, aged sixty-four years. No subjective symptoms. Tumor found on routine roentgenographic examination. No enlargement of the thyroid in the cervical region. No previous thyroidectomy. *a.* and *b.* On admission: rounded tumor in right upper part of midthorax (roentgenoscopic examination revealed tumor in right upper part of midthorax which moved with swallowing).

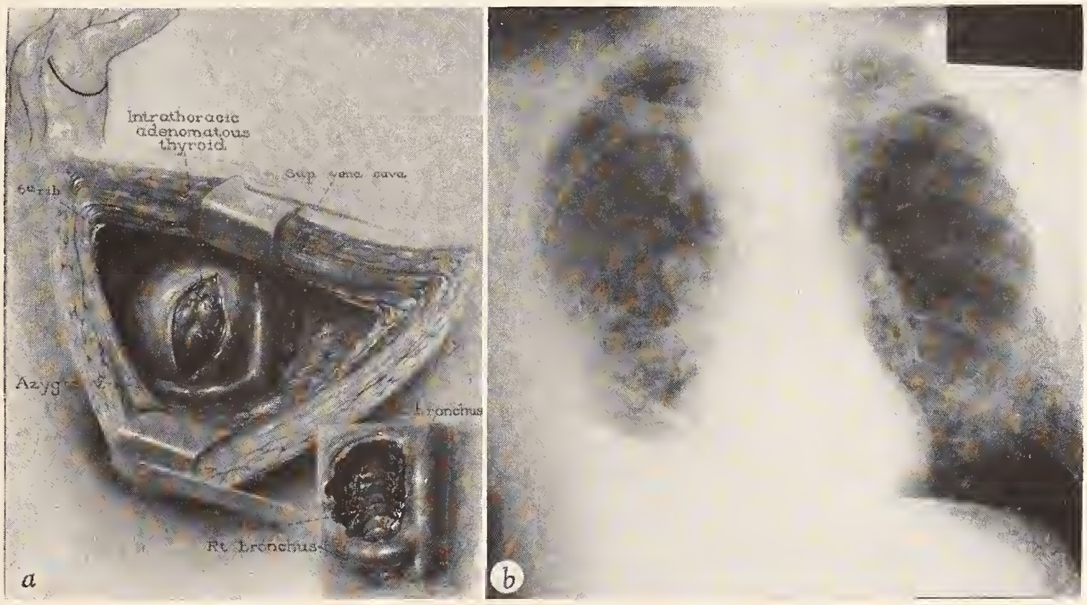


Fig. 6. Same case as Figure 5. *a.* At operation showing large intrathoracic adenomatous thyroid in the upper part of the posterior mediastinum above the azygos vein and lateral to the superior vena cava and extending posteriorly under both vessels. The tumor was attached to trachea and right upper lobe bronchus. Complete transpleural removal of tumor. *b.* Ten days after operation. Thickened pleura at site of tumor in upper posterior mediastinum and at the right base. Lungs fully inflated.

It is most essential not to remove the patient from the operating room until the bronchi are entirely clear of mucus, and on some occasions it may be advisable to keep the patient in the operating room until he has fully recovered from the anesthesia and the cough reflex is established. This is rarely necessary but in some cases in which the lung has been more or less collapsed by the tumor for a long time, it does not re-expand readily after removal of the growth. In many cases the pulmonary congestion can be minimized greatly if the lung is not permitted to remain collapsed for more than ten to fifteen minutes at one time during removal of the tumor. After being collapsed for this period, the lung should be fully re-expanded for three or four minutes to re-establish aeration and circulation of the blood before it is permitted to collapse again and removal of the tumor is continued.

If the roentgenograms of the upper part of the abdomen show dilatation of the stomach with gas, which not infrequently occurs when positive pressure is employed for the anesthesia, this should be relieved immediately by insertion of an indwelling stomach tube and application of suction to it. This tube may be removed after the accumulated gas has been removed or it may be left for a few days during the patient's immediate convalescence to remove any gastric secretions and to prevent vomiting. If this gas is permitted to remain in the stomach, it may cause acute dilatation.

Series Studied

In the series of 212 intrathoracic extrapulmonary lesions which I have operated on from 1925 to 1953, the classification of the tumors based on a histopathologic study of the lesions as is shown in Table I, is as follows: Fifty-eight were neuroblastomas. Forty-nine of these were located in the posterior mediastinum. Six of these forty-nine were both posterior mediastinal and intraspinal tumors, so-called dumbbell or hourglass type of neurofibromas. Five of the fifty-eight neuroblastomas were in the posterosuperior mediastinum, three were in the anterior mediastinum and one was situated in the lateral wall of the thorax. Three of the fifty-eight neuroblastomas were malignant.

Twelve of the tumors in the entire series were various types of fibromas of which seven were malignant and were designated as "sarcomatous." Roentgenologic findings and location of these tumors in the posterior mediastinum suggested a clinical diagnosis of probable neurofibroma.

Forty-three of the entire series were teratoid tumors. Thirteen were of the dermoid type of teratoma in which the predominant tissue was ectoderm. In these cases the epidermis lined the tumor, and the teratoma in one was of such high degree of organization that it was termed a "fetal parasite." This tumor was covered with epidermis. Forty-one of these teratoid tumors were situated in the anterior part and two in the posterolateral portion of the thorax. Six of the teratoid tumors had undergone malignant change.

TABLE I. INTRATHORACIC TUMORS

	Extrapulmonary Tumors
Neuroblastomas: (50 neurofibromas; 6 dumbbell; 3 or 5.1 per cent malignant. 5 ganglioneuromas; 3 sympathiconeurofibromas)	58
Cellular fibromas: (7 or 58 per cent malignant)	12
Teratomas: (6 or 14 per cent malignant; 13 dermoids)	43
Cysts:	
Mediastinal (12 celomic; 20 endothelial; 4 lymphangioma)	36
Bronchogenic	5
Thymomas: (5 or 25 per cent malignant)	20
Thoracic adenomatous thyroids	16
Hemangio-endotheliomas	8
Granulomas	5
Hamartomas	1
Lipomas	4
Mesotheliomas	2
Calcareous hematomas	2
Total	212

Thirty-six of the extrapulmonary tumors were cysts of the mediastinum. Of these, twelve were celomic or pericardial cysts; twenty were endothelial cysts; four were cystic lymphangiomas. There also were five bronchogenic cysts. None of these cysts were malignant. Cystic tumors of the esophagus and leiomyomas of the esophagus which may simulate posterior mediastinal tumors are not included in this series.

Twenty tumors of the series were thymomas and were situated in the anterior and superior mediastinum.

Sixteen of the tumors were intrathoracic adenomatous thyroids; all were below the third rib anteriorly and one extended to the diaphragm.

There were eight hemangio-endotheliomas; five various types of granulomas in the middle and posterior mediastinum; one hamartoma, entirely extrapulmonary in the anterior mediastinum; four lipomas in the anterior mediastinum; two mesotheliomas in the lower part of the thoracic cavity, one from the parietal pleura and one from the mediastinal pleura and two organized calcareous hematomas in the anterior mediastinum.

In all of the 212 cases of extrapulmonary tumors, the lesions were removed by transcostal intrapleural or extrapleural operation and in the six cases of posterior mediastinal and intraspinal neuroblastomas of the dumbbell type, laminectomy and mediastinotomy were performed.

There were seven operative deaths in the total series. Three of the patients who died had

(Continued on Page 1004)

Laboratory Aids to Medical Practice

Sponsored by
The Minnesota Society of Clinical Pathologists

ASPIRATION BIOPSY OF BONE MARROW

Its Diagnostic Value

GERTRUDE L. PEASE, M.D.
Rochester, Minnesota

ASPIRATION biopsy of the bone marrow has become a relatively simple and safe procedure. Study of the morphologic changes in this organ may offer valuable information to the clinician. The aspiration and preparation of the material for examination should be done according to an acceptable technique and the interpretation of findings should be done by physicians trained in hematology.

Laboratory tests done on peripheral blood in diseases affecting the hemopoietic system either primarily or secondarily may reveal one or more of the following conditions: anemia, leukopenia, lymphocytosis, monocytosis, thrombocytopenia, immature cells, normoblasts, rouleaux and elevation of the erythrocytic sedimentation rate. When such clinical findings as indeterminate fever, adenopathy, hepatomegaly, splenomegaly, purpura, indeterminate thoracic lesions and bony lesions exist with one or more of the previously mentioned laboratory findings and when a diagnosis cannot be established, morphologic alterations of the bone marrow may offer valuable information. With this information, the clinician may be able to establish a definite diagnosis, rule out certain diseases or obtain confirmation of a diagnosis that is fairly well established. Examination of the marrow may reveal changes or lesions not diagnostic in themselves but of such nature that other lines of investigation are indicated.

Among the findings in bone marrow that aid in the establishment of a definite diagnosis are the following: myeloma cells, lipid-storage cells characteristic of Gaucher's or Niemann-Pick disease, metastatic carcinoma, L. E. cells (lupus erythematosus) and granulomatous lesions. The latter, as will be mentioned presently, may be found in a number of conditions but if cultures of the marrow, animal inoculation, and special stains for organisms are done, evidence of histoplasmosis, brucellosis or tuberculosis may be found. Bone marrow may be the only tissue easily available for study in such cases.

Whenever splenectomy is being considered in the treatment of thrombocytopenic purpura or hemolytic anemia, studies of the bone marrow help in the exclusion of some underlying disease that may produce secondary thrombocytopenia or hemolysis. The presence of a leukemic process should be ruled out before splenectomy is considered.

Although the diagnosis of pernicious anemia may be fairly well established on the basis of clinical and peripheral blood findings, examination of the bone marrow offers further confirmation. The typical textbook picture is not present in the peripheral blood in every case of pernicious anemia nor are all macrocytic anemias classified as pernicious anemia. Megaloblasts and hypersegmented cells of the granulocytic series found in bone marrow confirm the diagnosis of pernicious anemia.

By common usage, the term "aplastic anemia" has come to mean a condition associated with anemia, leukopenia and thrombocytopenia. Certain drugs and toxic agents have played an important role in the production of this anemia but bone marrow should be studied to rule out leukemia or other malignant processes before such a diagnosis is made.

The diagnosis of leukemia can be made in most instances from the clinical and laboratory findings, together with the morphologic changes in the peripheral blood. Initial examination in some sub-

---

From the Section of Clinical Pathology, Mayo Clinic, Rochester, Minnesota.

acute and acute leukemias may reveal leukopenia and relatively normal values for erythrocytes and platelets. Only an occasional immature cell may be noted in smears of the peripheral blood. Atypical and immature cells occur in the peripheral blood of infants and children in a wide variety of disorders, and it is most important to rule out the possibility of leukemia in patients of this age group. Examination of bone marrow may be the only solution.

Among lesions not always diagnostic in themselves but of such a nature that other lines of investigation will be indicated are the granulomas. A report of the presence of a granuloma often comes as a complete surprise to the clinician because disorders characterized by granulomatous inflammation may simulate a number of diseases. Granulomatous lesions may be found in tuberculosis, brucellosis, histoplasmosis, sarcoidosis and occasionally in malignant lymphoma.

Lesions compatible with the diagnosis of malignant lymphoma have been found in bone marrow but usually biopsy of lymph nodes gives more adequate material for examination and diagnosis. Lesions typical of Hodgkin's disease have been found occasionally in bone marrow when no other tissue was available for biopsy.

Not all hematologic problems can be solved by study of aspirated bone marrow. If, however, a single aspiration gives negative results when the presence of a disorder of the hemopoietic system known to have a characteristic bone-marrow pattern is suspected, multiple sites should be used to obtain more material. It is occasionally impossible to obtain marrow by aspiration; in such cases, trephination is necessary to obtain a button of bone with the contents of the marrow cavity. Examination of such material may reveal replacement of marrow by fibrotic tissue or tumor cells.

In summary, studies of the bone marrow are of value in the diagnosis of diseases affecting the hemopoietic system either primarily or secondarily. The results may be of diagnostic significance, of confirmatory importance or of value in the exclusion of blood dyscrasias.

This is the eighth in a series of editorial reports sponsored by the Minnesota Society of Clinical Pathologists and designed to foster closer relationships between the practicing physician and his pathologist.

During the past decade, the study of bone marrow has become much commoner as part of a complete hematologic examination than it was formerly. This has come about in part because of a great increase in the application of all phases of hematology. Also of importance in this more frequent use of examination of bone marrow is the fact that many pathologists have become adept in the aspiration and study of such material.

Removal of bone marrow in most cases is an easy procedure. Proper use of local anesthetic agents insures the fact that about the only pain felt by the patient is momentary discomfort when suction is made for the actual aspiration. Many patients willingly have undergone multiple aspirations without complaint. Use of proper precautions, including a guard on the aspirating needle, renders the procedure free of practically all complications.

Thorough study of the material obtained, including quantitative, morphologic and bacteriologic examinations as indicated, often solves puzzling problems in hematologic disorders as well as in other diseases.

The editorial committee of the Minnesota Society of Clinical Pathologists, which includes Dr. Arthur H. Wells, of Duluth, and Drs. Arthur H. Sanford and George G. Stilwell, of Rochester, solicits suggestions and ideas regarding this series of editorial reports. Reprints of this presentation can be obtained from the author or the chairman of the committee.

George G. Stilwell, M.D.
Chairman, Editorial Committee

Mayo Clinic,
Rochester, Minnesota

ACHIEVEMENTS IN TUBERCULOSIS CONTROL

The past fifty years have been momentous in the fight against tuberculosis. At the outset, it was found that the control of the disease was the problem both of the physician and the layman. . . . The achievements have been substantial. Our horizon has been raised to new and challenging vistas beyond. Despite our gains, we still are dealing with a serious killing disease that has sacrificed countless lives that should have been preserved for productive effort.

So far as we can see at this time, tuberculosis will be with us for many decades to come. But we are drawing nearer to a complete understanding of its cause and control, which is beyond the tubercle bacillus alone. When we learn how to maintain our factors of resistance at a level that will keep the infection dormant, we may achieve as practical a result as complete eradication of the tubercle bacillus and the clinical manifestations of the germs in our bodies.—H. R. Edwards, M.D., American Review of Tuberculosis, March, 1952.

MEDICAL HISTORY OF THE COUNTY OF YELLOW MEDICINE

MILDRED B. LEE
Granite Falls, Minnesota

(Continued from August issue)

In the last years of the century the prosperity of the country at large was reflected in Yellow Medicine County. New schools were built, electric light and waterworks systems were installed in Canby, Granite Falls, Echo, and to a certain extent in Wood Lake. Telephones were coming into general use, better roads were being built with state aid, and the population of the county had increased from hundreds to thousands.

The oxen which had furnished motive power for the covered wagons, the breaking plow, and the long trips to market had long since gone the way of other frontier conveniences and were replaced by the fine matched teams of horses with nickel-studded harness, the high stepping family horse hitched to the polished buggy or "surrey with the fringe on top." By 1895 the horseless carriage was more than an inventor's dream: for there was actually a 1894 model Orient automobile in use on a mail route out of Canby which was capable of the phenomenal speed of fifteen miles per hour when at its best. Not so many years in the future a skilled mechanic and blacksmith in Granite Falls by the name of Olaus Lende would be building serviceable automobiles of his own design (with many features later adapted by more modern cars), which would be proudly driven by the town's leading citizens. In 1900, the local papers commented that an automobile would go through town almost every day, sometimes even two together. Probably the first doctor in the territory to own an automobile was Dr. Rogers of Montevideo, who had an Oldsmobile about 1900 or shortly thereafter.

Farm prices continued to be low, by modern standards, but a little money went a long way. One dollar would buy ten pounds of coffee, or twenty pounds of sugar, or thirty-two bars of soap. With raisins at five cents a pound, prunes five cents, rice six cents, and staples correspondingly low, farm prices were not greatly out of proportion. Although an agricultural county, Yellow Medicine was having a period of economic security and expansion.

Health problems had received their share of attention from government. A pure food and drug act provided the stimulus for better methods of care and production of food. Children were required to be vaccinated for smallpox before entering school, and doctors were not afraid to invoke the power of the law to enforce quarantine regulations, as Dr. Triplett did at Dawson, when he caused some protesting persons to be jailed and fined for interference. The germ theory had been generally accepted, by the public as well as by the medical profession, and greater consideration was given to possible sources of disease such as contaminated water. Canby with its deep wells had no problem. Wood Lake also had sunk deep wells to furnish the village with good water, but Granite Falls still took its city water, untreated, from the river, and depended upon local wells for its drinking water; although a representative of the State Board of Health urged the abandoment of all such wells, on the theory that they were filled with surface water which sank into a basin underlying the town.

With four railroads serving the county, transportation of the sick to medical centers was now merely a matter of a few hours when local facilities were insufficient; and surgery of a serious nature was performed in the city hospitals, except in emergencies. In 1898, Dr. N. H. Scheldrup established the first hospital in the county. It was at first located in East Granite Falls, near the site of the present municipal light plant, in the old Henry Hill homestead; but in 1900 more space was needed, so a large two-story frame house on Ninth Avenue was purchased for the purpose.

Medical Practice in Yellow Medicine County

Pioneer doctors faced great hardships in this new and sparsely settled region. Both youth and a hardy, adventurous spirit were required to brave the vicissitudes of Minnesota's inclement climate and the trackless wastes of its prairies, lacking all the comforts and advantages offered by more settled areas.

The first doctor's offices at Minnesota Falls were probably as good and as well equipped as any that could have been found at any time in the county in the next twenty years. Heated by wood stoves, lighted by oil lamps, furnished only with the bare necessities, it was necessary for the doctor to see to his own supply of wood and water and often to do his own janitor work. His mail was brought in by stage from the nearest railhead at New Ulm, Marshall, and later Willmar, and the doctor had to keep substantial amounts of drugs and medicines on hand because of the slowness of communication with the outside world.

The pioneer doctor made calls on horseback, on snowshoes, or on foot if the distance was not too great. It was necessary for him to have a horse or two and some sort of conveyance, although where there was a livery stable he could hire a rig to make his country calls. Doctors were probably the first to use the light buckboards and spring wagons which preceded the buggy; the settlers themselves preferred the more utilitarian wagons and ox teams which had brought them into the territory. As roads were laid out and built and the country became more settled horses replaced the oxteams and the wagons were superseded by surreys and buggies for transportation of the family to church or to town.

When the doctor had a conveyance of his own a driver was also needed, for in winter roads were often blocked by snow and in spring and fall were ankle deep in mud. It required the combined efforts of both doctor and driver to negotiate the snow banks and mudholes, and as there were few landmarks upon the prairie after a heavy snowfall there was security in having a companion. Also, the doctor who was trying to cover a large territory could rest while on the road between calls.

Since the germ theory was not advanced until long after some of the pioneer doctors had completed their medical training they were not unduly troubled by the lack of conveniences for medical practice. A little carbolic acid poured into cold water was sufficient for cleansing of instruments; they were simply swished around in this solution, and often left to gather dust when not in use. "Blood poisoning" was not uncommon, and often it resulted in death. Perhaps the large number of amputations performed in the early days was made necessary by fear of this complication which doctors then did not know how to prevent. Every accident seemed to necessitate amputation of some member of the injured person's body, and so frequent were they that a large per cent of the population must have been maimed in this way at one time or another. A rider who was thrown into barbed wire fence by a fractious horse; a man who carelessly shot himself through the arm, or one who was injured in the use of dynamite, or in the operation of horse-drawn vehicles, would after such injuries usually undergo amputation of torn or mangled limbs, and be considered fortunate if he did not die from loss of blood.

In fixing the county physician's salary the Board sometimes provided that the amount must include all amputations. One of the few items concerning Dr. Falk of Minnesota Falls was a bill presented to the Board for an amputation performed by him, with the assistance of Dr. Stratton, in the amount of $50.00. It was rare indeed for the Board to allow bills for medical services at the full amount, and this one was "layed over for investigation" till the next meeting. While the Board seemed to acknowledge the laborer as worthy of his hire, they reserved the right to fix the value. Thus Dr. Farnsworth's bill for $232.00 for the amputation of the arms, legs, and fingers of one of the hands of Michael J. Dowling was allowed at $155.10.

From 1873 to 1877, Doctors Falk, Stratton, and N. M. Smith were the only doctors known to be in the county. Of these Dr. Stratton was probably the best known. With Dr. Flynn of Redwood Falls he served the territory embraced in the original boundaries of Redwood County, as far west as Ortonville and the South Dakota line.

In every community there were women who were especially skilled in the care of the sick and experienced as midwives, and these valued members of the community relieved the doctors of the necessity of attending cases of childbirth and minor ills. Pioneer doctors held to the belief that birth was a natural process with which the midwife was competent to deal. Dr. Stratton often recommended a midwife when his services were requested. In Granite Falls Mrs. Margaret Hazelberg and Mrs. Maris Flaten served in this capacity, and at Echo Mrs. Jenny Giffen and Mrs. L. Moses might be called upon. Pioneer women also helped each other through these crises; Mrs. George E. Olds, an early resident and mother of five children, who reached the age of ninety-four still in splendid health, proudly boasted that she had never had a doctor in her house.

Mrs. Margaret Hazelberg came to the county on July 31, 1878, with her husband and five young children. They came to Marshall by train and from there to Granite Falls by ox team, which required two days' travel. Her older son, Knute, and daughter, Emma, were already established in Granite Falls. When a year later Mrs. Hazelberg was left a widow and responsible for the support of the family, she sought work as a practical nurse and midwife, which had formerly been her calling. Dr. Fuller and Dr. Stratton relied upon her help, and for many years she took care of the sick and attended women in childbirth throughout the area. It was said that she delivered more babies during her long service than all the doctors combined. Although she cared for people afflicted with diphtheria, consumption, typhoid and smallpox and still ordered her household of young children, she never communicated any of these diseases to her own family.

During her long life Mrs. Hazelberg won the esteem and affection of the community. Five prominent businessmen of Granite Falls presented her with a valuable gift and had her portrait hung in the city hall as a token of public esteem. This remarkable woman lived in Granite Falls until she reached the age of ninety-two years, then moved with her daughters to Minneapolis where she died at the age of 101 years.

The doctors who came to Yellow Medicine County were for the most part educated in the eastern medical schools, and may be considered to be representative of the profession. Almost without exception they were devoted to their patients and spared no effort in their desire to heal and cure, to cope with epidemics and to bring to this hinterland all of the benefits of medical care. The rewards for such service were small; yet at that time land could be bought for a few dollars an acre, and many doctors were wise enough to invest their small savings and profit by the steady increase in price. Others did much of their work on credit, and as usually happens in such cases were but poorly rewarded.

Dentists and Dentistry

Pioneer doctors expected to extract teeth for their patients, and instruments for this purpose were included in their medical equipment. Inventories in the estates of Dr. Fuller and Dr. Farnesworth include "dental tools, value $15.00" along with other items. Dr. Sweet might extract a tooth for a little girl for fifty cents; and give her back the half dollar for being a good child. The May 3, 1877, issue of the *Granite Falls Journal* ("Devoted to News & Making Money") states that Dr. Fuller had that day pulled eight teeth for one Peter Hanson who insisted that eight teeth were not too many to be pulled at one time; and in spite of the fact that part of his jawbone came away with one of the teeth Hanson insisted that it didn't hurt much, and started out on the fourteen-mile trip home as if nothing had happened. A display, the paper stated, "of pioneer grit and sand."

In 1877, Dr. A. Marden of New Ulm made regular trips through the county. There was also Dr. Kraft who did his work at the Commercial House in Granite Falls. In 1886, Dr. Woodmas of Montevideo began making regular calls at Granite Falls with his stand at the drug store of Hazelberg and Nare the first five days of each month, "teeth extracted without pain by the use of vitalized air." Dr. M. P. Salisbury was also a taxidermist; he had an office over the Post Office where he could be found the first half of each month. Dentists from St. Paul, Drs. Newel and Sandburg, Sandburg and Ellis, made periodical visits to the county. Dr. C. M. Leffingwell of Redwood Falls ("He is no common dentist, but one who has spent years in the business and commands the best knowledge of dentistry to be had") advertised in all the county papers. Dr. G. D. Moyer of Montevideo also made regular trips through the county. Dr. G. Ridgway shared an office with Dr. Cressy when he was in town.

The first dentists to reside in the county seem to have been Dr. W. J. Brady who had an office over Nare's Drug Store in Granite Falls, beginning in May, 1891, and Dr. F. Seeley who settled in Canby in August, 1889, but soon removed to Toronto, South Dakota.

The newspapers obligingly notified the public of the arrival of dentists: "the dentists are here, ready to jerk out grinders." "Dr. Fischer is doing a railroad business at Hanley Falls."

The best known of the early dentists was Dr. S. Wintner who established offices in Granite Falls early in the year 1898. He was very aggressive and advertised in most of the county papers. "Best set of teeth (with large illustration), $10. Filling and Cleaning Teeth $1.00. Teeth extracted without pain by the use of Odontunder." He spent the first two weeks of the month at Granite Falls, where he had at one time an office with Dr. N. H. Scheldrup. Later he had an office more conveniently located over a drug store.

But Dr. Wintner is remembered not for his dentistry, but as the principal in the county's most notable murder trial. The local legend is that Dr. Wintner gathered a number of local citizens together for poker at his office in the evenings, and in these sessions he was a consistent and heavy winner. After a time these victims of his skill decided to call in some outside help. Within a few days a young stranger was introduced into the group, and in the play that followed he proved to be more than a match for Dr. Wintner. But Dr. Wintner was a poor loser. In his anger over his losses he accused the young man of cheating and then, getting a revolver from a drawer, shot and fatally wounded him.

While the handsome young dentist languished in jail many of the young ladies of the community waited upon him with expressions of sympathy and offerings of food. The family of the accused provided the best counsel available, and the murder trial attracted large crowds. The Hon. A. J. Volstead was the county attorney. The sober citizens of the community fully expected a conviction, and were greatly shocked when the jury brought in a verdict of acquittal.

This closed Dr. Wintner's career in Granite Falls. Dr. E. C. Hawkins, who had worked with him for a time, then took a course in dentistry, took over his office, and practiced in Granite Falls until his death.

About the turn of the century Dr. Douglas of Minneapolis served the towns on the Minneapolis and St. Louis Railroad. He had a railroad car equipped as a dental office, and this was hauled from town to town according to a fixed schedule.

Druggists and Opticians

The first drug business in Yellow Medicine County was established by Drs. Falk and Stratton at Minnesota Falls, about 1874. The few newspapers of the time which are available for research do not mention this drug store, and it is probable that it was carried on by the doctors for convenience in their medical practice. Like most drug stores of the early days it sold liquor; the minutes of the County Board of March, 1876, specify that William Stratton shall be notified to apply for a license to sell liquor or "suffer the penalty."

"The Reliable Drug Store" of Marion Gould was the first drug store in Granite Falls. Gould secured a license to sell liquor in 1876, and continued to apply annually for a license as long as he remained in Granite Falls. The Gould stock was sold to Dr. Cressy in 1880 or 1881, and two years later Dr. Cressy took in a partner, J. C. G. Johnson, who was also an optician. Mr. Johnson not only fitted glasses for Granite Falls people but regularly went to Clarkfield and other towns in the county for that purpose.

A druggist who was a doctor but did not practice was Dr. C. H. Nare, who for many years operated a drug store in Granite Falls, with a stock of "patent medicines, chemicals, paints, brushes and varnish, window glass, putty and alabastine; toilet articles, drugs and medicines, and perfumerie."

In 1887, there were three drug stores in Granite Falls: Ireland and Powers, Nare's Drug Store, and Nelson and Johnson's Drug. Ben E. Nelson of Nelson and Johnson's Drug Store was also an optician, and remained in this business until long after the turn of the century. He had begun his apprenticeship in the Cressy Drug Store as a boy of eight or nine, sweeping out and running errands for the proprietor. When he finished elementary school he took a course at Carleton College and became a registered pharmacist, and also an optician. At the age of eighty he still carries on this work at Buffalo, Minnesota.

Canby's first drug stores were established about 1880, one by Lewis Gerald and another called the City Drug Store operated and owned by Adolph Gilberson. Dr. Billington is said to have been interested in a drug store in the early days and may have had a drug business prior to 1880 in Canby. Two doctors to go into the drug business in Canby were Drs. Chambers and McPeek, neither of whom were registered pharmacists.

The drug business was the first step toward the medical profession for some of the doctors who practiced in Yellow Medicine County. Dr. Fuller was a druggist before he took medical training, and this was also the case with Dr. Sweet and Dr. Frederick G. Watson, who was one of the first druggists in Wood Lake.

Pioneer druggists were not subject to the many restrictions and liabilities placed upon druggists of modern times. They were permitted to sell liquor upon doctors' prescriptions, and could sell any amount: by the pint, the gallon, or the keg. They could sell many kinds of sedatives; the druggist was supposed to be the judge as to whether or not it should be sold in each individual case.

Coroners of Yellow Medicine County
1872-1900

The County Board of Yellow Medicine County met for the first time on January 1, 1872, in a small brick building in Yellow Medicine City, and appointed John D. Otis to the office of coroner. Mr. Otis, who was later Judge of Probate of Yellow Medicine County, was a prominent pioneer settler, and the part of Stony Run Township which is the site of the city of Granite Falls was originally called Otis Township, in his honor. Mr. Otis did not qualify, and the Commissioners then appointed W. A. Monroe. When the first county election was held in November, 1872, Monroe was elected to the office, and re-elected in 1874. In 1876 J. A. Lewis succeeded to the office, and in 1878 it was taken over for the first time by a doctor—Dr. M. G. McLean of Canby.

In 1880, Dr. Florado H. Wellcome of Granite Falls was elected coroner, and held the office for two years. In 1882, Nels Erickson was elected but did not qualify, so again J. A. Lewis became the county coroner. In 1884, another layman, W. W. Pinney, owner of the Pinney Mill at Granite Falls, was elected, and in 1886, Ole J. Foss, a merchant of Granite Falls, succeeded him in the office.

The office again fell to a doctor when Dr. Albert R. Torgersen of Clarkfield was elected in 1888. He held the office until 1894, and was very conscientious in the performance of his duties, as shown by the case of Peter Strand, reported in the *Canby News* of 1889. Here was a death under suspicious circumstances. The *News* reports:

> "Dr. Torgersen, we believe, thinks a murder was committed and is inclined to think he was hindered somewhat in his investigation of the case."

According to the *News,* the body of Peter Strand was found in a meadow by a man named Luders. In view of the fact that Luders had been mowing in the meadow for several days prior to reporting the discovery, and the place where the body lay was in full view, the question arose as to why it had not been discovered earlier. Examination showed a quantity of blood about and wounds in the head and throat. The man was reported to have been a stranger in rather poor health, but reputed to have money inasmuch as he had remarked that he did not have to work for a living although he had taken employment as a farm hand. No money or valuables were found upon the body and it was buried at county expense.

After burial a further investigation was made. The body was exhumed. The County Attorney, A. J. Volstead, conducted the inquiry and a verdict of death by natural causes was entered. Evidently Dr. Torgersen as coroner did not sanction this verdict, and did not hesitate to make his disagreement known.

(To be continued in the October issue)

President's Letter

MEDICAL ALLIES

A large group of people who are closely allied to the medical profession add great strength to the medical team in its constant battle against the perils of disease and illness.

These people—members of those professions which so ably aid practicing physicians—have not always been given the esteem and importance they deserve. Many of us take these people for granted, for often their work is so normal a part of our lives that we overlook its importance to our own practices.

I am referring to medical technicians, medical technologists, nurses, physical and occupational therapists, x-ray technicians, dietitians, medical record librarians, medical social workers and anesthetists.

Most of us realize that these professions are composed of highly trained, efficient persons, who feel that they can serve humanity as readily and well as those who become doctors.

Recently, the Minnesota State Medical Association co-operated in a renewed effort to encourage junior and senior boys and girls to enter this field. Together with other interested organizations, the Association aided in the publication of a brochure which was sent to all high school seniors in Minnesota and in neighboring states.

The brochure presented the advantages of professional training in the allied medical fields, explaining where such training may be taken and outlining requirements and courses. Attractively printed and well written, the booklet gives a composite view of the entire field of allied medical careers and should be of considerable weight in convincing our young people that such training is worth while and that such a career would serve humanity.

Physicians of the state have been sent a copy of this brochure. It will serve as a ready reference when young men and women question the doctor about these careers, and information about these careers can be furnished quickly and easily through this pamphlet.

Not only can the doctor aid young people in choosing this type of career, but he can become an active force in the community to show that these careers are important, interesting and vitally necessary. Because he is an important and respected person in his place of practice, the physician can help young people to see that they are urgently needed in this profession, and that they will be welcomed into it by those already established.

Conrad J Campbell

President, Minnesota State Medical Association

◆ Editorial ◆

Arthur H. Wells, M.D., *Editor;* George Earl, M.D., Henry L. Ulrich, M.D., *Associate Editors*

THE NEW EDITOR SPEAKS

IT IS with mixed emotions of inadequacy, determination and enthusiasm that I have accepted the responsibility of the editorship of MINNESOTA MEDICINE. I can only hope that the journal will not deteriorate from the high standards which Dr. Carl Drake has maintained for so many years. The fact that Miss Olive Seibert is remaining as the publisher's editor is a great consolation. The many others who have taken an active part in the publication of the journal also should continue to assist in maintaining the standards already set.

A brief panoramic view of the present status of MINNESOTA MEDICINE as seen by one newly come upon the scene appears to be in order. Just as each physiologic function of the body has a good reserve in health, so the journal must receive adequate numbers of manuscripts to maintain its standing. There is a considerable gap between a minimum number which barely sustains life, and sufficient numbers of articles to permit some degree of discrimination, timely alterations, and delays for additional illustrations, et cetera, plus no less than four months of edited manuscripts in reserve for publication in their turn. Why should a journal representing some three thousand physicians seek manuscripts elsewhere, when its owners probably publish more scientific articles in other journals than any other comparable group of physicians in the United States? Why should a fertile source of Minnesota's scientific information be seriously drained into other journals, thus dividing our resources into rather thin streams? These and other related questions should be analyzed and their solution resolved in favor of MINNESOTA MEDICINE.

It appears to be the official reaction of our organization that any cost of the journal to the members is a deficit. If this be the case, possibly we should reconsider the matter. MINNESOTA MEDICINE represents the principal contribution to the advancement in medical science made by the organized physicians of the state. For years I have considered the various state medical journals as mirrors of the standard of medical practice in the area. Some are quite poor, and again there is the *New England Journal of Medicine.* All of this leads to a pet theory that those willing to write for our journal should be subsidized by those who can't find the time. Should our Association decide to share in the cost of reprints, then I am sure many physicians would feel a stronger inclination to publish in MINNESOTA MEDICINE. At the same time, all of our members would have the opportunity of more directly contributing to our torch of knowledge, and industry would be rewarded.

The present members of the Editing and Publishing Committee are appointed by the president for a five-year term. The editor, and not the president, is responsible for the publication of the journal. Why shouldn't he select his own assistants, so that they will be responsible to him? If they do not function in this work of love, why can't he drop them at the end of the year? This should not be a one-man journal. The editing committee should meet at least bimonthly to combine their efforts to build a better publication. The membership of this committee should have representation from the University of Minnesota and the Mayo Clinic, as well as throughout the state. Surely, most of us must agree that all groups should help in the construction of this scientific endeavor by which others will judge us.

Yes, indeed, it looks like an interesting voyage ahead. It is my earnest hope that the good ship MINNESOTA MEDICINE may keep a steady course under the guidance of her new navigator.

A. H. WELLS

PHYSICIANS' ASSISTANCE FUND

THE NEED for a substantial state fund for the relief of our needy colleagues has been clear to all of us for years.

We were late in our first tentative effort to do something about it, three years ago, and later still in our final determination, arrived at by the House of Delegates at the Saint Paul meeting this year, to levy a formal and compulsory assessment for the purpose.

Since 1951, when the Physicians' Assistance Committee was first created by the House of Delegates with Dr. W. R. Humphrey of Stillwater as chairman, some eight or nine appeals for help have been received, and the fund raised by repeated requests for voluntary contributions was pitifully inadequate to meet them. Here, if ever, was a cause to touch the heart of any physician and it was high time that we assessed ourselves to respond to it.

It should be noted that physicians are not asking the federal government to cover them under the Social Security program. But the fact remains that aging doctors who have not been able to set aside money for their last years are not cushioned, as their poorest patients are, against disaster. The number who need help at any one time is never very great. Often the need is only for funds to cover final hospital bills. But their necessities are as urgent as any man's. And it should be no great task for an Association like ours to provide for them.

The truth is, men and women—and doctors—being what they are, something more imperative than an impersonal appeal is generally necessary to get a general response. That is why the voluntary appeal failed and why the House of Delegates levied the special assessment in May.

This assessment is, indeed, compulsory, but only on active members who have not already contributed at least $10, and only for one year. Future assessments will wait upon the experience of the next few years.

Furthermore, this assessment should not be confused with the one levied last year to augment the general funds of the Association. This one is being collected separately from the dues and will be set apart in a separate fund to be used for assistance of needy colleagues only. The response, to date, has shown how heartily most of our members approve of the undertaking.

AMERICAN GERIATRICS SOCIETY

THE American Geriatrics Society was organized on June 11, 1942, at Atlantic City through the efforts of Dr. Malford W. Thewlis, of Wakefield, Rhode Island. The society was organized to study factors in the prevention and cure of diseases incident to advancing years. Membership has been open not only to physicians but to physiotherapists, hospital superintendents, registered occupational therapists, directors of homes for the aged, social and welfare workers and, in fact, all those who are interested in the welfare of the aged.

The increasing percentage of the population in the latter decades of life, emphasizes the importance of geriatrics in general. While industry may consider sixty-five the beginning of old age, the field of geriatrics concerns itself largely with those forty years of age and over.

It is becoming more and more recognized that aging is an individual matter and not a matter of years. To retire an individual at a certain age is an extravagant procedure, for many an individual has many years of usefulness ahead of him at sixty-five, just as many in this day and generation are burned out in the forties and even in the thirties. To retire every employe at sixty-five, to obviate the necessity of picking and choosing those too old to work beyond that age, seems unfortunate.

It has been said with some truth that a man is as old as his arteries. Certainly, a number of diseases incident to old age are due to degeneration in the arteries. To determine the cause of atheromatous changes in the arteries, as well as other changes incident to advancing years, is a worthwhile objective. We are shocked when we hear of a coronary thrombosis occurring in an individual in his thirties. Geriatrics must therefore concern itself with living before the age of forty, if it is to improve the state of health of those over forty.

Several journals devoted to geriatrics have appeared in recent years. *Geriatrics*, edited by Dr. Walter C. Alvarez, with Dr. Maurice B. Visscher, of Minneapolis, and Dr. Edward J. Stieglitz, of Washington, as consulting editors, is now in its eighth year. Included on its Board of Associate Editors are: Drs. Reuben F. Erickson, J. Arthur Myers, and S. Marx White, of Minneapolis, and E. L. Tuohy, of Duluth. A quarterly, entitled *The Journal of Gerontology*, published at Ann Arbor, Michigan, began publication in 1946. It is the property of the Gerontological Society of St. Louis, Missouri, and was incorporated in 1945.

In January of this year, the first number of *The Journal of The American Geriatrics Society* made its appearance. Dr. Willard O. Thompson, of Chicago, president of the society, is also editor of *The Journal.* Upon inquiry, we have been informed that the society started its own journal in order to control editorial and advertising policies.

BLOOD DONATION STILL NEEDED

WITH the cessation of hostilities in Korea, the need for blood derivatives has naturally lessened. On the recommendation of the Health Resources Advisory Committee, the Office of Defense Mobilization, on July 31, announced that the American Red Cross is closing on August 3, 1953, fifteen of its defense blood collection centers and is terminating its contract with seventeen co-operating community blood banks which have served as collection centers for the National Blood Program.

There is still great need for blood and its derivatives for civilian hospitals, for providing adequate reserves of blood derivatives to meet any emergency such as a national disaster or atomic attack and for the production of gamma globulin, the need for which in the poliomyelitis immunization program is almost unlimited. The forty-five regional blood collection centers of the American Red Cross will continue to operate at full capacity and it is urged that there be no letdown on the part of the public in blood donation.

According to the American Medical Association's *Washington Letter* of July 24, about a third of this year's supply of gamma globulin was sent, in June and July, to eleven counties in eight states for mass injections. Such widespread use should shed further light on the value of gamma globulin in preventing polio infection and paralysis.

DOCTOR KEEFER APPOINTED SPECIAL ASSISTANT TO OVETA CULP HOBBY

THE medical profession has every reason to feel happy at the appointment of Dr. Chester Scott Keefer as Special Assistant on Health and Medical Affairs to Mrs. Oveta Culp Hobby, Secretary of Health, Education and Welfare. The medical profession has insisted for years that the health activities of the federal government should be supervised by a medical doctor, trained in medical administration. Dr. Keefer apparently fills the requirement.

Dr. Keefer received his medical degree from Johns Hopkins University in 1922 and has been Professor of Medicine at Boston University School of Medicine. He is an expert on antibiotics and he supervised penicillin and streptomycin distribution for the United States and our allies during World War II. He was also chairman of the National Research Council's committee on chemotherapeutics which advised on civil defense medical stockpiling. Dr. Keefer has been physician-in-chief at Massachusetts Memorial Hospital since 1940. He is also a fellow of the American College of Physicians, a member of the American Society of Clinical Investigation, and has served on the American Medical Association's Council on Pharmacy and Chemistry. Under terms of Reorganization Plan No. 1, creating the department, in which the American Medical Association House of Delegates concurred at their meeting in Washington, D. C., earlier this year, it was agreed that the Special Assistant be charged with advising the Secretary in reviewing all health and medical programs of the department as well as health and medical legislation.

ELMER L. HENDERSON

The death in July of Dr. Elmer L. Henderson of Louisville deprived the medical profession and the country of an outstanding personality. A surgeon who took a lively interest in medical organization, he was recognized as a dynamic leader by his election simultaneously to the presidency of the American Medical Association and the World Medical Association. Not content to rest after serving as president of both of these organizations, a strenuous assignment, he organized and became president of the American Medical Education Foundation to provide assistance for the medical schools and maintain their independence. So important, in his opinion, was the need of a change in administration in Washington that he gave up his official connections with organized medicine to form a unit of doctors for Eisenhower for president.

By a strange coincidence, Dr. Henderson died within the same twenty-four hours of the same disease as Robert A. Taft, his good friend and also a crusader for private enterprise as opposed to socialism. The following excerpt from Dr. Henderson's inaugural AMA address in San Francisco, June 27, 1950, illustrates his militant stand against Socalized Medicine.

> "American medicine has become the blazing focal point in a fundamental struggle which may determine whether America remains free, or whether we are to become a Socialist State, under the yoke of a Government bureaucracy, dominated by selfish, cynical men who believe the American people are no longer competent to care for themselves. . . .
>
> "American medicine, which has led the world in medi-

(Continued on Page 992)

Medical Economics

Edited by the Committee on Medical Economics
of the
Minnesota State Medical Association
George Earl, M.D., Chairman

COMMISSION REPORTS ON MILITARY DEPENDENTS' CARE

New coals have been heaped on the fire concerning the responsibility of the federal government for medical care of dependents of servicemen.

Equal medical and dental care for all eligible dependents of military personnel was recommended by the Citizens Advisory Commission on Medical Care for Dependents of Military Personnel—in view of, and in spite of the American Medical Association's opposition to military physicians being used to care for what is actually the civilian population.

The advisory commission was set up by Secretary of Defense Wilson to make a comprehensive study of the program of medical and dental care of dependents of servicemen. The commission probably is a result of a recommendation of the controversial Commission on the Health Needs of the Nation, which said of this matter:

> "However, the drafting of physicians and dentists for military service, with the result that the services of some of them are utilized to a great extent for the care of civilians, has disturbed the health professions. This whole matter needs a complete and definitive review: First, to determine what the Government's responsibility shall be to military dependents; and secondly, to decide in what way this responsibility shall be discharged."

Members Well Known

Chairman of the new commission is Harold G. Moulton, former president of Brookings Institution. Other members are: Dr. George W. Bachman, senior staff member of Brookings Institution assigned to health matters; Lewis W. Jones, president of Rutgers University; Mrs. Eugene Meyer, of the *Washington Post;* and Thomas I. Parkinson, president of the Equitable Life Insurance Company.

Coverage Inclusive

One of the surprising and alarming recommendations made by the Citizens Advisory Commission on Medical Care for Dependents of Military Personnel is the amount and type of medical care coverage to be extended to eligible personnel. According to the report, care should be *limited* to the following: (1) diagnosis, (2) acute medical and surgical conditions, (3) contagious diseases, (4) immunization, (5) maternity and infant care, and (6) emergency dental care —except in overseas or remote areas where civilian dental facilities are not available.

In glancing over this list, one wonders if "limited" is the correct terminology, and whether the term "be extended to include" would not serve better.

However, the Commission does provide a list of exclusions:

> "(1) Domiciliary care and chronic diseases requiring hospitalization; (2) Nervous and mental disorders; (3) Elective medical and surgical treatment, and (4) Prosthetic devices, hearing aids, orthopedic footwear, and spectacles (except overseas and at remote stations), ambulance service, except in acute emergency; and home calls, except in cases where it is medically advisable to confine the patients at home."

How to Finance?

The whole suggested program brings about the interesting question of how the Commission proposes to finance this program. And, of course, that old familiar worrisome phrase raises its head again, "Let the Government do it." Of great interest to all taxpayers is the Commission's method of proposed financing, as reported in a recent issue of "Social Legislation Information Service": The Commission noted in its report that if we furnish free medical care at military hospitals the care provided for those who must depend upon civilian facilities should also be at Government expense. The Commission considered the question whether the *supplementary* program, through private facilities, might best be handled on an insurance basis, but concluded that no insurance plan is desirable. The Commission recommended the following:

> "1. Care whenever practicable should be provided by military medical facilities, and the dependent who lives within 25 miles of military facilities should, except in emergencies, be required first to seek aid at the military establishment.
>
> "2. If military medical facilities are not available, he should be given a certificate to present to a civilian doctor or agency of his own choosing.
>
> "3. The patient would be required to pay the first $10, plus 10 per cent of the remainder of the bill, for any one illness treated by civilian doctors. (This is exclusive of maternity cases.)
>
> "4. For those living more than 25 miles from military medical facilities, since they must depend almost entirely upon civilian facilities, they would also be furnished with certificates which can be presented to a civilian hospital or doctor."

Thus it can be seen that if the Commission has its way, no eligible military dependent would be excluded from virtually free government medical care. However, the proposed program awaits favorable implementary legislation from Congress.

Defines "Eligible"

The Commission also took upon itself the task of defining just who is an eligible military dependent. As the "Social Legislation Information Service" states, this group has grown more through custom than by any clear-cut policy. Rather than definitive legislation, Congress has, throughout the years, defined to some extent, who is eligible, by approval of the various Service departments' annual budgets, thus giving authority for medical care to military dependents.

Noting that "there are numerous discrepancies with respect to definitions of dependents in the various Services," the Commission recommended that dependency status for medical care be restricted to:

1. Spouse and unmarried children under twenty-one.
2. Widows and dependent children of servicemen who lose their lives while on active duty or while retired with pay.
3. Parents and parents-in-law if in fact dependent and when residing in the home of the serviceman.
4. Dependent sons and daughters over twenty-one who are incapacitated.

PUBLIC DEBT NEAR LEGAL LIMIT

The federal debt of the United States has now reached the staggering total of $267 billion, just $8 billion under the congressional-imposed ceiling of $275 billion. According to a recent issue of "Insurance Economics Surveys," which quotes directly from the *Christian Science Monitor,* this debt will probably not change much between now and the end of the fiscal year, June 30, 1954.

A sizable deficit is in the making for the next year, the publication says, and the treasury has already estimated that its borrowings until the end of 1953 will reach around $8 billion.

However, the survey states that this does not mean the debt will reach the statutory limit this year: "But it wouldn't be necessary to go out in the market for all of this. The Treasury could avoid putting the debt dangerously close to the limit by taking money out of the general fund, which contains several billions of tax money awaiting disposal. Moreover, spending might be reduced under an administration pledged to economy. Nevertheless, the public debt is uncomfortably close to the statutory limit."

Marked Increase Shown

Over the history of the United States, the federal debt has taken tremendous jumps upward. And because of this, the survey feels, "it would be foolhardy to set some particular figure for the national debt beyond which disaster could be seen imminent." It traces the history of debt increases:

> "After the Civil War the debt was $2.2 billion, held to be too high. After World War I it had risen to $25.2 billion, regarded by then-prevailing sentiment as an incubus on the economy. Then years later in 1939 it was just under $40 billion, but fear of rising debt appeared to have vanished against the greater fear of unpreparedness.
>
> "When World War II exploded, the debt zoomed to heights undreamed of. Now there are those who say we need not fear this debt; instead, we can make it a tool for economic progress if properly managed."

Controversy Noted

Of course, the article states, there is considerable argument on how this huge indebtedness is to be handled. There are two schools of thought on the matter: the "soft" money people, who are unafraid of continuing inflation, who favor a controlled market as opposed to a free one, and who do not worry about large deficits as long as the country has full employment and prosperity; and there are the "hard" money people who stand for balanced budgets, reduction of the debt during high employment, an end to artificially low money rates, curtailment of centralized federal power with more emphasis on private enterprise.

Naturally, this whole question raises a vital issue for every thinking American. Depending on how the problem is handled, it could mean continued higher taxes and a further spiraling of the national debt; or it could mean lower taxes and a definite effort to reduce the national debt. In view of the medical profession's expressed view favoring less power for the central government, more spreading of business to private enterprise, and strict economy measures, it is well for doctors to keep a watchful eye on what happens to this all-important problem of a close-to-the-limit national debt.

CONSTRUCTION CONTINUES ON HILL-BURTON HOSPITALS

In view of the extension of the Hill-Burton Hospital Construction Act until June 30, 1957, the following résumé of construction figures for Minnesota is presented:

Projects which have been completed and are now in operation in Minnesota total thirty-three, with a cost of $24,560,931. Of this, the federal government contributed $8,013,995. These projects have supplied 1,361 additional hospital beds to the state.

At present there are seven projects under construction at a total cost of $16,916,752, which includes a federal contribution of $3,917,286. These projects are expected to supply about 371 additional beds.

Also, there is one project which has been approved, but which is not under construction as yet. This will cost $942,703, of which the federal government will contribute $419,717, and will be designed to supply 64 additional hospital beds in the state.

REPORT TOTALS FEDERAL RESEARCH AID

The National Science Foundation recently released a report showing the total of funds expended by the federal government to aid scientific research and development.

The four big departments of government which spent the most money for aid to research in the year ending June 30, 1952, were the Department of Defense, the Atomic Energy Commission, the Department of Health, Education and Welfare and the Department of Agriculture.

During the above quoted year, a total of $2.2 billion funds was spent, one-seventh of which went to nonprofit institutions. Eighty teaching and research hospitals received financial aid totaling $4,590,000.

The report notes that only 1 per cent of the country's hospitals received Federal research help in 1951-1952 and adds:

> "When compared with the total number performing a training function, the number receiving funds is still relatively small. This is especially noteworthy in the case of the teaching hospitals with major affiliations, i.e., those hospitals which have been designated by one or more medical schools as a major unit in the teaching program of the school . . . In 1951-52, twenty out of 154 such hospitals, or 13 per cent, received funds."

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

230 Lowry Medical Arts Building

Saint Paul, Minnesota

E. M. Jones, M.D., Secretary

LICENSE OF MINNEAPOLIS PHYSICIAN SUSPENDED FOR EIGHTEEN MONTHS

In re George F. Schmidt, M.D.

On July 18, 1953, the Minnesota State Board of Medical Examiners suspended for eighteen months, the medical license of Dr. George F. Schmidt, seventy-two years of age. Dr. Schmidt was arrested by Minneapolis police officers on April 21, 1953, charged with the crime of abortion. At the time of his arrest, Dr. Schmidt had his office at 2707 Nicollet Avenue, Minneapolis. Dr. Schmidt was also a deputy coroner of Hennepin County at that time. On April 28, 1953, Dr. Schmidt entered a plea of guilty to the charge of abortion. On May 29, 1953, Dr. Schmidt was sentenced to a term of not to exceed four years in the state prison. The Court suspended the sentence and placed Dr. Schmidt on probation for three years.

Dr. Schmidt also admitted his guilt when he appeared before the Medical Board on May 22, 1953. Dr. Schmidt admitted performing a number of other abortions in the past five years.

Dr. Schmidt was born in Minnesota in 1881. He graduated from Hamline Medical School in 1908, and was licensed that year by examination.

The Dean's Page

POLICIES RELATING TO ADMISSION OF MEDICAL STUDENTS

The responsibility for selection of each year's medical class is delegated by the Dean and the faculty of the Medical School of the University of Minnesota to five of its fellow members, who comprise the Admissions Committee.

Present facilities, staff, and budget of the Medical School are adequate, according to accepted standards, for about 100 students per class. However, because of the pressure for more positions, in recent years between 125 and 130 students have been accepted for the freshman class. The number of applicants varies somewhat from year to year, but is always several times the number of places available.

The minimum requirements for admission to the Medical School are three academic years of college work, totalling 135 quarter credits. Only in the case of superior students, at the discretion of the Admissions Committee, may this total number of credits be reduced under the quality credit rule of the College of Science, Literature, and the Arts. Required courses are rarely, if ever, waived; and then only at the discretion of the Admissions Committee. The minimum scholastic average which may be considered is "C." In view of the large number of well-qualified applicants each year, an average well above "C" is usually necessary in order to achieve admission.

The required courses include a varying number of credits in English, mathematics, chemistry, physics, zoology, psychology, social sciences, and humanities. Although a reading knowledge of a modern foreign language is no longer a requirement for admission, it is recommended that students devote some of their elective credits to German, French, or another appropriate modern foreign language.

Required courses make up approximately two-thirds of the credits needed for admission. In choosing electives, the premedical student is advised to avoid random sampling of elementary courses. The Admissions Committee shows preference for the applicant who has displayed a well-developed interest in and aptitude for a special field of knowledge.

Though the total number of necessary credits can be earned in three years of college work at normal pace, most students benefit from a fourth year of general or specialized education before they enter upon the medical course. This period of preparation is encouraged by the Admissions Committee. The Medical College Admission Test, which is a medical aptitude test sponsored by the Association of American Medical Colleges, and the Minnesota Medical Aptitude Test must be taken by the applicant before he can be accepted.

Acceptance for admission to the Medical School is based primarily upon ability and scholarship, as indicated by aptitude tests and scholastic records, and upon personal qualifications as evidenced by personal interviews and by recommendations of persons who know the applicant well. First choice is given to residents of Minnesota, second choice to residents of adjoining states which do not have medical schools, and third choice to residents of other states or countries who have acceptable reasons for desiring to attend this Medical School. Non-residents are accepted only if their scholarship has been outstanding and other qualifications indicate that they have unusual promise for the study of medicine or a career in science. The number of non-residents admitted averages about 8 to 10 per cent of each class. Some preference is given to applicants from rural areas of the state, since our studies have indicated that young men from rural communities are most likely to return to a rural area to practice.

The choice of students in no way depends on race, nationality, religion, or sex. In other words, no "quota" for any such group exists. The application blank to the Medical School requests no information as to the applicant's race or religion. The percentage of women in past classes has averaged less than five per cent, simply because of the sparsity of female applicants.

It is considered desirable that the medical student be free of financial worry during his course. Hours spent outside class in employment for support restrict appreciably the student's ability to gain optimum knowledge from the already crowded curriculum. A limited number of long-term loans are available through the University Bureau of Student Loans and Scholarships, and through the Minnesota Medical Foundation. A small though constantly increasing number of scholarships has been made available through the Minnesota Medical Foundation, the Minnesota State Medical Society, and private foundations. These total less than twenty in each class. It is hoped that some day contributions to the Minnesota Medical Foundation will be large enough to allow a majority of the medical students to have scholarship support.

The Admissions Committee is constantly and acutely aware of the difficulty in judging a person's ability to succeed in medical school. The scholastic average in the required natural sciences correlates the most highly of any of the various premedical experiences with actual success in the Medical School. However, other tests of ability and aptitude and personal recommendations are taken into account, as well as such factors as work outside of school and participation in school and community affairs. The Admissions Committee is constantly seeking new testing methods which have additional predictive value.

HAROLD S. DIEHL
Dean of Medical Sciences

Minnesota State Medical Association

HOUSE OF DELEGATES—SUMMARY OF PROCEEDINGS*

Saint Paul Session—May 18, 19 and 20, 1953

First Meeting, Sunday, May 17, 1953

Continental Room, Hotel Saint Paul
Saint Paul, Minnesota

The 100th Annual Session of the House of Delegates of the Minnesota State Medical Association opened in the Continental Room of the Hotel Saint Paul, Saint Paul, Minnesota, at 1:45 P.M., Sunday, May 17, 1953, Dr. C. G. Sheppard presiding.

After an invocation by Reverend Ira B. Allen of Saint Paul who thus initiated a precedent at this centennial meeting of the Association, minutes of the 1952 meeting were accepted, a quorum being present, and President O. J. Campbell of Minneapolis welcomed the delegates.

Dr. Leonard W. Larson of Bismarck, North Dakota, trustee of the American Medical Association for this area, was introduced. He spoke briefly on the work of the Board of Trustees and current national undertakings of organized medicine. Dr. Larson's remarks were followed by an extended discussion, conducted by Mr. Thomas A. Hendricks of Chicago, secretary of the Council on Medical Service of the American Medical Association, on the functions of the American Medical Association, its Councils and committees and its financial structure. An illuminated exhibit called "You and Your American Medical Association" (later moved from the hotel to the exhibit hall at the St. Paul Auditorium), was used to illustrate his remarks by Mr. Hendricks.

After introducing Mr. C. H. Crownhart of Madison, secretary of the State Medical Society of Wisconsin, and Mr. E. R. Thayer, Executive Director of Public Information of the Wisconsin Society, Dr. Sheppard called on Dr. A. O. Swenson of Duluth, chairman of the Council, to present the report of its first meeting.

Report of the Council

DR. SWENSON: The first meeting of the Council in connection with the 100th Annual Meeting of the Minnesota State Medical Association was held Saturday, May 16, 1953, at 2 p.m. in the Hotel Saint Paul.

Following the report of Dr. J. M. Waugh, chairman of the Finance Committee, on Association finances, Council considered and approved upon recommendation of Dr. John F. Briggs, chairman of the Association's Committee on Tuberculosis, the Governor's Interim Committee Report on Codification of Tuberculosis Laws for the sanitoria of the state, embodying possible use of some smaller sanitoria for geriatrics and chronic illness rather than for tuberculosis treatment. Also substitution of buffered for unbuffered tuberculin by the State Board of Health and the program of routine admission chest x-rays to be instituted in all hospitals in the state, with the stipulation that methods of initiation be decided by the roentgenologist, the staff, and the administrator of the hospital. The recommendation that sensitivity tests to the tubercle bacillus be done by the Minnesota Department of Health was likewise approved; also the proposal to send an official letter of commendation to Drs. L. S. and Kathleen Jordan of Granite Falls for their excellent and public-spirited service in the field of tuberculosis.

The following applications for *Life Membership* were accepted: Albert E. Ahrens, M.D., Saint Paul; Harry R. Baker, M.D., Hayfield; Frank T. Benoit, M.D., Winona; William Aaron Bessesen, M.D., Minneapolis; Albert E. Booth, M.D., Minneapolis; Frederick H. Buck, M.D., Shakopee; Edward Q. Ertel, M.D., Ellendale; Carl O. Estrem, M.D., Fergus Falls; Henry William Goehrs, M.D., St. Cloud; G. D. Haggard, M.D., Minneapolis; John V. Kelly, M.D., Saint Paul; Rae T. LaVake, M.D., Minneapolis; Frank J. Lexa, M.D., Lonsdale; Orianna McDaniel, M.D., Minneapolis; Benedik Melby, M.D., Blooming Prairie: Ette L. Mever, M.D., Minneapolis; Frank Naegeli, M.D., Fergus Falls: Daniel C. O'Connor, M.D., Eden Valley; Theodore S. Paulson, M.D., Fergus Falls; Fred J. Pratt, Sr., M.D., Minneapolis; A. Mason Randall, M.D., Ashby; Theodore Satersmoen, M.D., Pelican Rapids; Homer R. Smith, M.D., Minneapolis.

The following applications for *Residency Memberships* were approved: Kenneth G. Berge, M.D., Rochester; Robert C. Bolin, M.D., Saint Paul; Donald E. Bowes, M.D., Rochester; Wayne A. Chadbourn, M.D., Minneapolis; Peter C. Dykstra, M.D., Rochester· E. Wayne Gilley, M.D., Rochester; John H. Glaeser, M.D., Minneapolis; John L. Juergens, M.D., Belle Plaine; Bradley W. Kusske, M.D., St. Louis Park; Richard O. Leavenworth, Jr., M.D., Saint Paul: John B. O'Leary, M.D., Saint Paul; George R. Wilkinson, M.D., Rochester; Fred Eugene Wise, Jr., M.D., Rochester: Donald S. Swenson, M.D., Saint Paul.

The following applications for *Junior Associate Membership* were approved: Linus F. Leitschuh, M.D., Winsted, and Archibald W. Graham, M.D., Chisholm.

For *Associate Membership*, the following were approved: Clarence S. Bossert, M.D., Mora: Rudolph C. O. Logefeil, M.D., Minneapolis; John deJ. Pemberton, M.D., Rochester; Ellery De. W. Simpson, M.D., Minneapolis.

For *Service Membership* the following were approved: Alex Barno, M.D., Minneapolis; James A. Bastron, M.D., Rochester; James Bellomo, M.D., St. Paul; Hector M. Brown, M.D., Walker; John Paul Dahlstet, M.D., Mankato; Neal B. Davis, M.D., Rochester; Elmer M. Doherty, M.D., New Prague; John A. Evert, Jr., M.D., Saint Paul: Clarence R. Ferrell, M.D., Grand Rapids; Gerald I. Freeman, M.D., Saint Paul; Benjamin F. Fuller, M.D., Saint Paul; Grant L. Garlock, M.D., Bemidji: Neill F. Goltz, M.D., Saint Paul; Melvin L. Grais, M.D., Minneapolis; Glenn Gullickson, M.D., Minneapolis; Warren W. Haesly, M.D., Winona; George W. Haugen, M.D., Minneapolis; Robert J. Havel, M.D., Minneapolis; George W. Heine, M.D., Little Falls; John J. Heisler, M.D., Minneapolis; Donald E. Hogan-

---

**In accordance with action by the Council of the Minnesota State Medical Association in 1944, publication of the proceedings of the House of Delegates is limited to summary.*

son, M.D., Bemidji; Robert T. Hood, Jr., M.D., Rochester; Howard L. Horns, M.D., Minneapolis; Rollin J. Houle, M.D., New Brighton; Curtis M. Johnson, M.D., Dawson; Harold C. Johnson, M.D., San Diego, California; Peter J. Kitzberger, M.D., New Ulm; Malcolm J. Lester, Jr., M.D., Truman; Henry R. Lyons, M.D., Rochester; Sam M. Mackoff, M.D., Saint Paul; Rensselaer W. McClure, Jr., M.D., Rochester; Norman B. Metcalf, M.D., Princeton; Donald W. Mulder, M.D., Rochester; Valentine O'Malley, M.D., Saint Paul; Calvin R. Openshaw, M.D., Rochester; William B. Parsons, Jr., M.D., Rochester; Charles R. Peluso, M.D., Minneapolis; David R. Philip, M.D., Windom; Edward J. Richardson, M.D., Saint Paul; Richard J. Salk, M.D., Herman; Arnold G. Schwyzer, M.D., Ah-Gwah-Ching; S. C. Siegel, M.D., Saint Paul; George Randall Smith, M.D., Hutchinson; Robert A. Stoy, M.D., Little Falls; Lawrence J. Swanson, M.D., Saint Paul; David C. Utz, M.D., Rochester; John Edward Verby, M.D., Litchfield; D. E. Westover, M.D., Saint Paul; Louis James Wilson, M.D., Winona; Charles M. Zeigler, M.D., Pine River.

The Council appointed a temporary committee of five to study the possibility of establishing a uniform and central malpractice insurance program, with a view to making a financial saving in rates. This committee was instructed to report findings to the Council at the September meeting.

On the basis of a survey of publication costs and possible revenues, of Minnesota Medicine, the Council recommended that actual publication responsibilities for the journal remain in the hands of Bruce Publishing Company since it was clear, on the basis of the findings, that no saving would be effected by transfer of these responsibilities to the State Office. Also, that advertising rates be raised for the year 1954 to equal the rates charged by other medical journals of comparable circulation, for national advertising. That an effort be made, also, to increase the amount of local advertising in the journal. An effort is to be made, likewise, to increase the number of pages available for advertising so as to increase revenue and avoid the annual deficit. Mr. R. R. Rosell, Executive Secretary, was requested to take over business management of the journal in place of Mr. J. R. Bruce of the Bruce Publishing Company, who resigned.

The Council also deferred action on a request for development of a standardized medical report form for use in reporting health and accident cases, pending action by the American Medical Association's Council on Medical Service. It directed the Committee on Chronic Illness to develop an exhibit for the annual meeting of the American Association of Nursing Homes to be held in Minneapolis and referred a proposed educational program developed by a committee of the American Academy of Orthopaedic Surgeons on the public care of the crippled child to the Association's Committees on Child Health, Fractures and General Practice, for study and recommendations. It also approved affiliation of University of Minnesota Hospitals with the Minnesota Hospital Service for a year's trial period, on recommendation of the Association's Committee on University Relations, with the understanding that the Dean of the Medical School be requested to submit an annual report to the Council on the number of Blue Cross patients, the number of other patients admitted each year and the county and referring physician.

Following the dinner recess, the Council discussed two proposed changes in the By-Laws. The first, providing that payment of AMA dues be made a requirement for membership in the State Association, was tabled pending submission to the House of Delegates of the American Medical Association in New York of a resolution calling for the American Medical Association to make payment of current AMA dues, only, sufficient for membership in good standing, in the event that the State Association should make such payment a prerequisite to membership.

The second change read as follows (new matter in capital letters):

"Section 7. MEMBERS SHALL BE SUBJECT TO CENSORSHIP, SUSPENSION OR EXPULSION FOR GOOD CAUSE AND AFTER DUE NOTICE AND HEARING FROM THE COMPONENT MEDICAL SOCIETY AND FROM THE STATE ASSOCIATION. REGULATION OF PROFESSIONAL ANNOUNCEMENTS AND OTHER INFORMATION ABOUT MEMBERS MADE PUBLIC BY MAIL, PRESS, RADIO AND OTHER SUCH MEANS SHALL BE THE CONCERN OF THE COUNTY OR DISTRICT MEDICAL SOCIETY INVOLVED (AND THE DECISION OF THESE SOCIETIES ON SUCH MATTERS SHALL BE FINAL). Any physician who may feel aggrieved by the action of the society of his county or district in refusing him membership, or in suspending, censoring or expelling him shall have the right to appeal to the Council, and if he desires, to the Judicial Council of the American Medical Association. SUCH APPEAL TO THE COUNCIL SHALL BE PREFECTED WITHIN SIX MONTHS FOLLOWING THE DATE OF DECISION BY THE CONSTITUTED AUTHORITY OF THE COMPONENT MEDICAL SOCIETY. Only on the basis of QUESTIONS OF law and procedure should final determination rest with either the Council of the Minnesota State Medical Association or the Judicial Council of the American Medical Association."

This change was approved for submission to the House of Delegates.

Other actions included recommendation for passage by the House of a resolution on the subject of public criticism by physicians or physicians' organizations, prepared by the Minnesota Academy of General Practice; nomination of Dr. Frank H. Krusen of Rochester for the President's "Physician's Award of 1953," as Minnesota's candidate, for facilitating employment of physically handicapped persons; decision to send Dr. G. B. Logan, chairman of the Committee on Child Health, or a member of his committee, as delegate to the Fourth Annual Conference on Physicians and Schools; reference of the group insurance program of the Charles O. Finley Company to the Committee on Medical Economics for study and report; appointment of Dr. C. G. Sheppard, Speaker of the House of Delegates, as alternate advisor in Minnesota to the Student American Medical Association with instruction that either he or Dr. R. H. Creighton, advisor, attend the 1953 convention of the group; reference of the proposals made by the Northern and Southern Medical Associations for extension of nurse training programs to rural hospitals, to the Committee on Hospitals and Medical Education. A resolution of thanks for assistance during the 1953 session of the Legislature from the Minnesota Pharmaceutical Association was accepted.

Possible changes in Blue Shield contracts were outlined and discussed by Dr. E. J. Simons, Dr. O. I. Sohlberg and Mr. F. Manley Brist, and the Council adjourned until the next day, after instructing that the Blue Shield matter be presented to the House of Delegates at the Monday meeting.

The report of the Council was accepted as a whole with the understanding that the change proposed in the By-Laws was to be read and voted on, separately and finally, at the next day's session.

Report of the Finance Committee

Speaker Sheppard then called on Dr. J. M. Waugh, chairman of the Finance Committee of the Council, who outlined the financial condition of the Association and reported that the deficit of 1951 has been erased with the aid of the special assessment and that the year 1952 ended with a balanced budget. He strongly recommended, however, that the $10 assessment be made a permanent part of the dues which would then be $40 instead of $30 a year for the state association. The recommendation was based upon increased operating expenses of the association, plus the need for larger cash reserve for operation.

The permanent Investment Fund of the Association now has a market value of approximately $116,000, he reported, and is still somewhat short of the goal which has been set at an amount approximating the annual budget of the association. It was designed by the founders as a reserve to be used only in case of a catastrophic situation.

Dr. Waugh asked that the report be adopted and that, with its adoption, the dues be raised, as suggested.

It was moved, seconded and unanimously voted that the report be accepted and the dues raised for the state association from $30 to $40 a year.

Further Changes in the By-Laws

At the request of Speaker Sheppard, Dr. P. J. Pankratz of Mountain Lake, chairman of the Interim Committee on Changes in the By-Laws, appointed last year by the House of Delegates, proposed four changes having to do with appointment of the nominating committee, with selection of the First Vice President and his duties, and with the caucuses directed to be held in each councilor district from which a councilor is to be elected.

These changes were submitted in accordance with the provision of the constitution on changing the By-Laws, to be voted on at the next meeting of the House of Delegates.

Speaker Sheppard then read, as follows, the changes in the Constitution and By-Laws presented last year (altered passages indicated in capital letters), for final vote of the delegates at this meeting:

Constitution

Article I—THE NAME OF THIS ORGANIZATION IS THE MINNESOTA STATE MEDICAL ASSOCIATION, WHICH MAY HEREINAFTER BE REFERRED TO AS THE ASSOCIATION.

Article III—Location. THE HEADQUARTERS OF THE MINNESOTA STATE MEDICAL ASSOCIATION, INCORPORATED UNDER THE LAWS OF MINNESOTA, IS LOCATED IN THE CITY OF SAINT PAUL, COUNTY OF RAMSEY AND STATE OF MINNESOTA.

Article V—MEMBERSHIP CLASSIFICATIONS. THIS ASSOCIATION SHALL CONSIST OF ACTIVE, LIFE, SERVICE, AFFILIATE, RESIDENCY, HONORARY AND ASSOCIATE MEMBERS, AS SPECIFIED IN THE BY-LAWS.

Article VII—Annual Sessions and Meetings, Section 2. THE GENERAL TIME AND PLACE FOR HOLDING EACH ANNUAL SESSION SHALL BE FIXED BY THE HOUSE OF DELEGATES, EXCEPT THAT THE EXACT DATE OF THE SESSION MAY BE FIXED BY THE COUNCIL.

Article IX—Officers, Section 6. IN CASE OF VACANCY IN AN OFFICE, UNLESS OTHERWISE PROVIDED FOR IN THIS CONSTITUTION OR BY-LAWS, THE COUNCIL SHALL HAVE THE POWER TO APPOINT TEMPORARILY A SUCCESSOR, UNTIL THE HOUSE OF DELEGATES SHALL MEET AND ELECT ONE, OR UNTIL THE NEXT ANNUAL SESSION.

Article X—Funds and Expenses. THE ANNUAL DUES SHALL BE DETERMINED BY A TWO-THIRDS VOTE OF THE DELEGATES PRESENT. FUNDS MAY ALSO BE RAISED FROM THE ASSOCIATION'S PUBLICATIONS, BY VOLUNTARY CONTRIBUTIONS, AND IN OTHER MANNER APPROVED BY THE HOUSE OF DELEGATES. FUNDS MAY BE APPROPRIATED BY THE HOUSE OF DELEGATES TO DEFRAY EXPENSES OF THE ASSOCIATION, FOR SCIENTIFIC AND EDUCATIONAL PUBLICATIONS, AND FOR SUCH OTHER PURPOSES AS WILL PROMOTE THE ADVANCEMENT OF MEDICINE. ALL RESOLUTIONS APPROPRIATING FUNDS MUST BE APPROVED BY THE COUNCIL BEFORE ACTION IS TAKEN THEREON.

It was moved, seconded and carried that each of the above changes be adopted and that they become a part of the Constitution and By-Laws of the Association.

Dr. Leo Nash of Saint Paul, Chairman, reported for the committee appointed by the chair last year to evaluate the program of the University Cancer Detection Center, that complaints about the program of the Center have not been shown, after extensive study of the committee, to be justified. The committee, therefore, endorsed the current program of the Center, especially as a teaching center for cancer detection for doctors of the state and as a research center for evaluation of established methods of cancer detection, as well as a means of educating people to demand periodic examinations of the type done at the Center, and recommended that the Minnesota State Medical Association approve the extension of the program for one more year, the Minnesota Division of the American Cancer Society having agreed to finance the Center for that period. The report was accepted unanimously by the delegates.

Speaker Sheppard then called for reports of the reference committees. Dr. P. J. Pankratz of Mountain Lake gave the report of the Reference Committee on Medical Education Reports.

Medical Education Reports

Dr. Pankratz: The Reference Committee on Medical Education Reports met this morning at the Hotel Saint Paul. The following reports were considered:

Committee on Cancer—A. H. Wells, M.D., Duluth, Chairman
Committee on Conservation of Hearing—L. R. Boies, M.D., Minneapolis, Chairman
Committee on First Aid and Red Cross and Committee on Blood and Blood Banks—John S. Lundy, M.D., Rochester, Chairman
Heart Committee—F. J. Hirschboeck, M.D., Duluth, Chairman
Committee on Hospitals and Medical Education—H. S. Diehl, M.D., Minneapolis, Chairman
Committee on Public Health Nursing—Mario Fischer, M.D., Duluth, Chairman
Committee on Syphilis and Social Diseases—H. G. Irvine, M.D., Minneapolis, Chairman
Committee on Tuberculosis—J. A. Myers, M.D., Minneapolis, Chairman
Committee on Vaccination and Immunization—R. N. Barr, M.D., Minneapolis, Chairman

The Committee accepted the reports with the following special comments and recommendations: That a new term, "audiology," defined as the science of evaluating hearing, has been accepted by the Committee on Conservation of Hearing and information should be made available as suggested about the Audiological Clinic at the University; that delegates should make a point of reading carefully the excellent report of the Committee on First Aid and Red Cross; that the increase in incidence of infectious hepatitis reported by the Committee on Vaccination and Immunization be noted, also its possible transmission by contaminated syringes and needles; and that the Committee be asked to request from the State Board of Health a definition and outline of an accepted technique for mass immunization programs and that the information be distributed to county medical societies and public health nurses; that the Minnesota Department of Health be commended for its cancer program and that the report of the Cancer Detection Center Committee (heard earlier), be commended and approved; that efforts to increase the number of medical students and nurses accepted for training and graduation be especially commended as reported by the Committee on Hospitals and Medical Education and that the large number of new hospitals and hospital additions built in Minnesota without Federal aid be noted; that special commendation be bestowed upon the Committee on Syphilis and Social Diseases for its work in lowering incidence of these diseases, but that the need of constant vigilance should be stressed; and that special note should be made of the fact that the number of blood samples marked "pregnancy," submitted for analysis, is roughly only one-half the number of daily births; that the State Board of Health should be strongly supported by the Association in every phase of its tuberculosis control program.

The House of Delegates approved the report of the Reference Committee on Medical Education Reports as a whole. Speaker Sheppard then called for the report of the Reference Committee on Miscellaneous Scientific Reports, Dr. Claude J. Ehrenberg, Minneapolis, Chairman.

Miscellaneous Scientific Reports

Dr. Ehrenberg: The Reference Committee for Miscellaneous Scientific Reports met this morning and considered the following reports:

Committee on Anesthesiology—R. C. Adams, M.D., Rochester, Chairman
Committee on Brucellosis—W. W. Spink, M.D., Minneapolis, Chairman
Committee on Child Health—G. B. Logan, M.D., Rochester, Chairman
Committee on Chronic Illness—E. L. Tuohy, M.D., Duluth, Chairman
Editorial Committee—Carl B. Drake, M.D., Saint Paul, Chairman
Committee on Diabetes—J. R. Meade, M.D., Saint Paul, Chairman
Committee on Fractures—E. T. Evans, M.D., Minneapolis, Chairman
Committee on General Practice—R. H. Creighton, M.D., Minneapolis, Chairman
Historical Committee—Robert Rosenthal, M.D., Saint Paul, Chairman
Committee on Industrial Health—L. S. Arling, M.D., Minneapolis, Chairman
Committee on Maternal Health—J. J. Swendson, M.D., Saint Paul, Chairman
Committee on Medical Testimony—E. M. Hammes, Sr., M.D., Saint Paul, Chairman
Committee on Military Affairs—J. H. Tillisch, M.D., Rochester, Chairman
Committee on Nervous and Mental Diseases—W. P. Gardner, M.D., Saint Paul, Chairman
Committee on Ophthalmology—T. R. Fritsche, M.D., New Ulm, Chairman
Committee on Public Health Education—F. J. Elias, M.D., Duluth, Chairman
Radio Committee—R. M. Burns, M.D., Saint Paul, Chairman
Speakers' Bureau—H. M. Carryer, M.D., Rochester, Chairman

The Committee approved these reports with the following comments: That the Minnesota Society of Anesthesiologists be regularly given one session at the annual meeting, or part of a session, for a program on anesthesiology and in view of the fact that, though the number of maternal deaths in Minnesota in 1952 was very low, four were due to anesthesia, speakers on the subject be invited to address county and district medical societies; that the Committee on Brucellosis be discontinued as recommended; that particular attention be paid to the rehabilitation program of the State Board of Health as noted by the Committee on Chronic Illness; that the campaign to find hidden diabetes sponsored by the Committee on Diabetes and county medical societies all over the state has reached many people in Minnesota, with the Hennepin county society reaching some 36,000 and of these well over one hundred were found with sugar in the urine; that the recommendation of the Committee on Fractures for establishment of first aid training in the seventh and eighth grades (a proposal to be acted upon by the Committee on First Aid and Red Cross, also, in the course of this meeting) and the endorsement of employment by the Minnesota Department of Health of a Health Educator in Child Accident Prevention (also recommended by the Committee on Child Health) be noted and approved; that the recommendation by the Committee on General Practice that the president of the Minnesota Academy of General Practice become chairman of the committee, upon his retirement from office, appears agreeable to all and should be considered; that employment of Mrs. Nora Guthrey of Rochester as special writer and investigator for the Historical Committee is desirable; that the Committee on Maternal Health should be commended for doing one of the ablest jobs in the country in determining causes of maternal deaths; in that connection attention was called to the fact that the maternal death rate in Minnesota includes maternal, as well as obstetrical deaths, as opposed to many other states where obstetrical deaths alone are included; that physicians are apparently not reporting instances of unethical medical testimony to the Committee on Medical Testimony; that the work of the Committee on Military Affairs should be considered in co-operation with the Committee on Industrial Health to avoid confusion in plans made by each of them for disaster aid in Civil Defense; that mental health matters are probably in very good hands in the state, in spite of the fact that the office of Commissioner of Mental Health has been abolished; that attention should be called to the Eye Pathology Laboratory which the Greater University Fund will support at the University, in connection with the report of the Committee on Ophthalmology, and donations can be earmarked for this purpose: that the delegates be urged to review the report of the Committee on Public Health Education, including reports of the Radio Committee and the Speakers' Bureau, in detail.

The delegates voted to accept the report of the Reference Committee on Miscellaneous Scientific Reports and Speaker Sheppard called on Dr. E. C. Bayley of Lake City, Chairman of the Reference Committee on Medical Economics Reports.

Medical Economics Reports

Dr. Bayley: The Reference Committee on Medical Economics Reports met this morning and considered the following reports:

Editing and Publishing Committee—E. M. Hammes, Sr., M.D., Saint Paul, Chairman
Committee on Hospitals and Professional Relations—J. Minott Stickney, M.D., Rochester, Chairman
Committee on Interprofessional Relations—W. P. Gardner, M.D., St. Paul, Chairman
Medical Advisory Committee—W. H. Hengstler, M.D., Saint Paul, Chairman
Committee on Medical Economics—George Earl, M.D., Saint Paul, Chairman
Committee on Medical Ethics—Louis A. Buie, M.D., Rochester, Chairman
Committee on University Relations—F. J. Elias, M.D., Duluth, Chairman

The Committee moved acceptance of these reports with the following comments and suggestions: That the Editing and Publishing Committee be commended for showing a profit of more than $4,000; that the Principles of Medical Ethics of the American Medical Association should be adopted by the Minnesota State Medical Association; that the Committee on Medical Economics be commended for its vigilant stand against the threat of socialized medicine and that it be urged to continue its study of improvements in the state's coroner system; that parents of students all over the state who participate in athletic contests under the Minnesota State High School League and in the current athletic benefit plan be informed that medical benefits under the plan are only partial payments for services rendered; that every county and district society should have a Grievance Committee to consider and evaluate complaints; that the Medical Advisory Committee be commended for its report and that an effort to ascertain the amount of actual losses by insurance companies in the state be suggested to the committee, as distinct from reserves set up by the companies to cover pending cases, also that the membership be told again that accurate data on the incidence and disposition of all claims would be available without reliance upon insurance companies, if 100 per cent co-operation could be obtained by the state office from all members threatened with suit.

Following discussion by Dr. L. A. Buie of Rochester, Chairman of the American Medical Association's Judicial Council, on the advisability of making the Principles of Medical Ethics the official standard of all state associations, the delegates voted to accept the report as a whole and the Speaker called for the report of the Reference Committee on Miscellaneous Medical Economics Reports, Dr. A. E. Brown of Rochester, Chairman.

Miscellaneous Medical Economics Reports

Dr. Brown: The Reference Committee on Miscellaneous Medical Economics Reports met this morning and considered the following reports:

Insurance Liaison Committee—Clarence Jacobson, M.D., Chisholm, Chairman
Committee on Medical Service—J. A. Bargen, M.D., Rochester, Chairman
Committee on Rural Medical Service—Paul C. Leck, M.D., Austin, Chairman
Committee on State Health Relations—C. E. Proshek, M.D., Minneapolis, Chairman
Committee on Veterans Medical Service—R. H. Creighton, M.D., Minneapolis, Chairman

Reports of these committees were all accepted for approval by the delegates with the following comments: That the Committee on Rural Medical Service be commended for an excellent job in promoting rural health education and that the Woman's Auxiliary be given special thanks for its part in this work; that the Committee on State Health Relations also be commended for its continuing effort to improve the coroner system in the State; that the Athletic Benefit Plan of the Minnesota High School League (touched on by the Reference Committee on Medical Economics Reports) be more fully considered by the delegates and that some insurance plan be worked out that would more adequately carry athletes through serious injuries and that some method of making sure that parents have a better understanding of the scope of this insurance be worked out, also. Extensive discussion of possibilities for insurance, to be financed either by the school board, or athletic funds, or by the parents, followed, and Dr. Bargen was instructed to see that a letter explaining the present status and purpose of the plan to all parents be sent out as proposed by the League this fall.

The delegates accepted the report of the Reference Committee on Miscellaneous Medical Economics Reports, and Speaker Sheppard called for the report of the Reference Committee on Officers and Councilors Reports, Dr. L. E. Steiner, Albert Lea, Chairman.

Officers and Councilors Reports

Dr. Steiner: The Reference Committee on Officers and Councilors Reports met this morning and the following reports were discussed: Secretary and Executive Secretary, Treasurer, Chairman of the Council and Councilors of districts one through nine.

The reports of all officers and councilors were considered and approved by the reference committee with the following comments: That the work of the Secretary and Executive Secretary has continued on a high level and that they should be commended for their fine work of the past year; that the Council and delegates be requested to give the matter of the Physicians' Assistance Fund further consideration.

The delegates accepted the report and adjourned at 4:40 p.m.

Second Meeting, Sunday, May 17, 1953

The second meeting of the House of Delegates convened in the Continental Room of the Hotel Saint Paul, Saint Paul, at 8:15 p.m., Sunday, May 17, 1953.

Speaker Sheppard called on Dr. A. J. Chesley and Dr. R. N. Barr of Minneapolis for a report from the Minnesota Department of Health.

Dr. Chesley outlined major actions by the Legislature at its last session which affect the work of his department and the medical profession, notably the continuation of the Commission on Alcoholism for which $7,500 was appropriated to cover salary of a state consultant, expenses of an advisory board of nine and of a secretary stenographer, all to be developed under direction of the State Board of Health; also continuation of the study of requirements for care of the aged and chronically ill. He noted that grants-in-aid from the federal government have been drastically curtailed and that the program of mass tuberculosis case finding by means of mobile x-ray units will have to be discontinued except where surveys are already under way or have been promised; also that registrations and reports for the Division of Vital Statistics have now been organized on a county rather than a local community basis, except where cities have definitely specified a local city basis by ordinance; that it is hoped to set aside a laboratory room in the department headquarters for virus work, especially in view of new developments in influenza research; but that no funds will be available for the evaluation study of new tuberculosis drugs suggested by the medical association's Committee on Tuberculosis.

Dr. Barr pointed out that the care and rehabilitation of chronic diseases is the biggest problem facing the department, as well as the medical profession; that many new beds for the care of the chronically ill have been built during the past year; but that hospital beds are only one aspect of the problem which requires also medical care, nursing homes easily become overcrowded and under-problem of all right now is maintenance of standards in all these services and in this work doctors are the biggest factor and must take the lead. He also noted that nursing homes easily become over-crowded and understaffed; but that where facilities are provided for rehabilitation and where activity is systematically encouraged it is possible, as in Oak Ridge home in Minneapolis, for 66 per cent of the patients to walk out of the hospital and save the state untold amounts of money. With respect to the cut in aid for the tuberculosis program, Dr. Barr pointed out that routine hospital admission x-rays, sponsored by the association's committee and the Council, will find twice as many unsuspected cases as the mass x-ray surveys and that services performed by these mobile units can and should be taken up by doctors and medical services of local communities. He drew attention to the effectiveness of the maternal mortality program of the doctors in terms of lowered death rates in Minnesota.

Speaker Sheppard called on Dr. R. H. Wilson of Winona, Chairman of the Medical Advisory Committee of the State Division of Social Welfare, who reported that his committee has had fine co-operation from the Division of Social Welfare. No policy affecting medicine, no fee schedule or drug program is ever put into effect without clearing with the Medical Advisory Committee. He pointed to the difference between the budget for medical care when he first went on the committee, which was $500,000, and the $13,000,000 appropriated for the next biennium and emphasized that, although the entire program is labelled "medical care," physicians receive only about 15 per cent of the appropriation. The rest goes for hospital and other services. One reason for the large amount appropriated is that no limit is placed on medical services and more people are taking advantage of the program partly because it is free and partly because many families no longer take care of the ill and aged at home. To help cut down medical expenses he urged all doctors to discharge patient-clients from general hospitals as soon as possible. He also urged that every county society appoint an active medical advisory committee of its own to assist the state committee and iron out as many problems as possible at home. He also suggested that physicians consider establishment of a uniform fee schedule for the state, based upon the Blue Shield schedule. No uniform schedule will be forced upon the doctors by the state department; and no such schedule has been in use since the early days of the SERA when a schedule was adopted providing roughly for 33⅓ per cent of average fees. Many difficulties arise because of the discrepancy between fees in smaller towns and the cities.

Dr. F. F. Callahan, Saint Paul, Director of Medical Service for the Division of Social Welfare, emphasized the advantage of active local medical advisory committees, declaring that very little trouble over fees ever arises where such committees function.

After a report from Dr. L. L. Sogge of Windom, Chairman of the Public Policy Committee, and Mr. F. Manley Brist, attorney for the Association, Speaker Sheppard called for the Necrology report from Dr. F. J. Hirschboeck of Duluth. A moment of silence was observed.

After calling attention of the delegates to the special section devoted to "100 Years of Medicine in Minnesota" published that morning by the *Saint Paul Pioneer Press and Dispatch* in honor of the centennial meeting of the Association, Speaker Sheppard adjourned the meeting at 9:30 p.m.

Third Meeting, Monday, May 18, 1953

The House of Delegates reconvened at 1:20 p.m. at the Continental Room, Hotel Saint Paul, Saint Paul, Minnesota, with Speaker Sheppard presiding.

Dr. E. M. Hammes, Sr., Saint Paul, Chairman of the Editing and Publishing Committee, announced that Dr. Carl B. Drake had resigned after thirty-four years as editor of the Association's journal, MINNESOTA MEDICINE, and that the committee had not yet selected an editor to take his place. He also suggested that a vote of thanks and appreciation be given by the delegates to Dr. Drake for his long and distinguished service.

It was unanimously voted to send to Dr. Drake a resolution embodying the thanks and appreciation of the delegates, and Speaker Sheppard called for final action on proposed changes in the By-Laws.

Changes in the By-Laws

It was unanimously voted to make the following changes (read for the first time, at the first meeting, Sunday, May 17):

Chapter I, Section 6, having to do with associate members.
Chapter I, Section 9, having to do with residency members.
Chapter II, Section 9, having to do with duties of the Nominating Committee of the House of Delegates.
Chapter III, Section 4, having to do with selection of nominees for the office of councilor.
Chapter IV, Section 3, having to do with duties of the Vice President.
Chapter IV, Section 4, having to do with duties of the Speaker of the House of Delegates with respect to submitting names of nominees for the office of councilor.
Chapter VII, Section 7, having to do with county and district societies.

Speaker Sheppard then called for a special report from the Committee on First Aid and Red Cross, Dr. John S. Lundy of Rochester, chairman, which met earlier the same day to consider the program of first aid education proposed by the Committee on Fractures for seventh and eighth grade students.

Dr. Lundy recommended for this committee that a plan be set up to increase emphasis on first aid training in the schools of Minnesota, including disaster training and planning; That this program include all grades of the junior and senior high schools; That the plan be drawn up by competent groups and presented to the Commissioner of Education for this approval.

The report was unanimously approved, and Speaker Sheppard called on Dr. W. R. Humphrey of Stillwater to outline the status and needs of the Physicians' Assistance Fund.

Dr. Humphrey reported that out of a paid membership in the Association of 2,876 last year, only 321 members had contributed to the fund. The amount of money realized was only $3,936 which was obviously not enough to enable the committee to put any program in operation. The committee felt from the beginning, Dr. Humphrey said, that fund raising should not be left to voluntary contributions. Some men could be depended upon to give more than the suggested $10 apiece and others would fail to give any at all. Actually, one society, the Park Region Medical Society with fifty-six members, made fifty-nine contributions and realized $640, while some other bigger societies gave hardly anything at all. Many of the men who need help are not 100 per cent needy, Dr. Humphrey said. Some have inadequate fixed incomes, or they may need help with hospital bills, or they are disabled by illness or have encountered other misfortunes. It is the opinion of the committee that the volunteer method having been tried and having failed, every active member of the association who has not already invested at least $10 in this fund should be assessed $10.

In the discussion which followed it was revealed that eight or nine physicians in the state are in need of help at the present time; but that there has not been sufficient experience with the problem to be certain how large a fund would be needed, or how often the assessment would have to be made.

It was accordingly moved, seconded and carried that all active dues-paying members who have not already contributed at least $10 to the Physicians' Assistance Fund be assessed $10 for the year 1953, with all details as to the date when the assessment is due and when a member may be declared delinquet for nonpayment, and also as to methods of collection and disbursement be left to the decision of the Council.

Speaker Sheppard then called for the report of the Resolutions Committee, Dr. R. H. Wilson of Winona, Chairman.

Resolutions of thanks and appreciation to the Ramsey County Medical Society as host for the centennial meeting, to the *Minneapolis Tribune* and the *Minneapolis Star* for their excellent reporting of the meeting, to the *Saint Paul Pioneer Press and Dispatch* for the special centennial supplement on "100 Years of Medicine in Minnesota," to the Hotel Lowry and Hotel Saint Paul, the Saint Paul Auditorium and the Saint Paul Association for their contributions to the comfort of guests and success of the meeting were read by Dr. Wilson and passed unanimously by the delegates.

A resolution of appreciation to Mr. F. Manley Brist of Saint Paul, attorney for the Association, for his contribution to medicine through the work of the Committee on Public Policy, the Minnesota State Board of Medical Examiners and Minnesota Medical Service was submitted by the Upper Mississippi and the Stearns-Benton Medical Societies and presented by Dr. Wilson. Also a resolution of thanks to Dr. L. L. Sogge for his long service as President, as Councilor and as Chairman of the Committee on Public Policy was submitted by the same societies. Both resolutions were passed unanimously with a rising vote of applause by the entire assembly.

A resolution placing the Minnesota State Medical Association whole-heartedly behind the study now being made by the Legislative Research Committee, at the direction of the 1953 Legislature, on improvements which should be made in the state's coronor system was passed for submission to the Research Committee. A resolution from the Renville County Medical Society on the subject of the Veterans Administration was referred for study to the Committee on Veterans Medical Service.

The following resolution from the Minnesota Academy of General Practice was unanimously passed. It paralleled several other resolutions from the Renville, Ramsey, Stearns-Benton and Park Region societies.

WHEREAS it is agreed that public criticism of one physician by another is a violation of the principles of medical ethics of the American Medical Association and

WHEREAS in recent months nation-wide publicity has been given to intra-professional criticism and

WHEREAS such statements have tended to extol one branch of medical practice and disparage another, and

WHEREAS these statements are considered inimical and unbecoming to the dignity of the profession

THEREFORE BE IT RESOLVED that the House of Delegates of the Minnesota State Medical Association condemn such statements and direct that its delegates to the American Medical Association convening in New York in June, 1953, and

BE IT FURTHER RESOLVED that the delegates of the Minnesota State Medical Association to the American Medical Association further any effort made in the American Medical Association to curb such irresponsible action in the future, and

BE IT FURTHER RESOLVED that a copy of this resolution be forwarded to the Council on Medical Practice of the American Medical Association.

The following resolution, incorporating resolutions from the Upper Mississippi, Todd County, and Stearns-Benton Societies, was passed by the delegates:

WHEREAS there has been a marked lack of uniformity in the fee schedules as regards old age recipients, aid to dependent children and the blind in our state social welfare program, and

WHEREAS it would facilitate matters very much on the state level if we had a uniform fee schedule system throughout the State of Minnesota for these welfare cases.

THEREFORE BE IT RESOLVED that we recommend that the component medical societies of the State of Minnesota negotiate with their local welfare boards regarding the adoption of the Blue Shield fee schedule, with necessary supplements, as a standard fee schedule for these welfare cases throughout the state.

The final resolution was introduced by Dr. Wilson as submitted last year by Leo Nash of Saint Paul. The resolution specifically condemned consultation with cultists, in conformity with the Principles of Medical Ethics of the American Medical Association, and directed that offenders be reminded of this violation of the principles of medical ethics by proper judiciary authorities of the state or constituent society, on complaint of members. It was unanimously passed by the delegates.

Speaker Sheppard called for the final report of the Chairman of the Council, Dr. A. O. Swenson of Duluth.

Report of the Chairman of the Council

Dr. Swenson: The second meeting of the council in connection with the 100th Annual Meeting was called to order at 8:30 a.m. Sunday, May 17, 1953.

The Council recommended approval by the House of Delegates of a three-year continuation of the Cancer Detection Center at the University of Minnesota. Plans outlined provided for continuing the present patient load at the ratio of one-third new patient examinations to two-thirds re-check examinations with the reduction after March 1, 1954, to one-sixth new patient examinations and an increase to five-sixths re-check examinations, so as to keep the average load at about 5,000.

The Council also recommended approval of a plan to set up a one-year Laboratory Aid Training program at the University, including six months of hospital training for each trainee.

The following nominations for *Delegates and Alternates to the American Medical Association* were submittee to be voted on by the delegates: Drs. George Earl, Saint Paul; O. J. Campbell, Minneapolis; F. J. Elias, Duluth, as delegates: Drs. E. M. Hammes, Sr., Saint Paul; W. W. Will, Bertha; and A. O. Swenson, Duluth, as alternates, respectively.

To clarify the period which must be covered by annual reports from Association committees, the Council directed that the committee year should coincide with the calendar year and that all annual reports should cover that period, with supplemental reports to be made when needed after consultation with new committee chairman, officers and councilors.

It was decided, also, that a quorum for conducting committee business should consist of a majority of the members; but that business might be transacted by a minority of members with the right reserved by the Council to reject their report and ask for further consideration.

The Chairman reported that the National Health Council which he attended in New York, as representative of the Council, took no action on the report of the President's Commission on the Health Needs of the Nation after two days' discussion. He reported, also, that multiple Blue Shield contracts of varying costs and benefits would best serve the needs of the public in the opinion of the Health Council.

Transfer of Freeborn County Medical Society membership from Council District 1 to District 2 was reported and approved.

The Council re-convened Monday at 8:30 a.m. listened to plans for future developments of the Blue Shield (outlined below for the delegates), concurred in expression of appreciation made at Sunday's meeting by the delegates for the work of Dr. Carl B. Drake, retiring editor of Minnesota Medicine, and authorized the Editing and Publishing Committee to obtain the services of a new editor with arrangements for his salary to be reviewed by the Council.

Speaker Sheppard then called on Dr. E. J. Simons, Medical Director of Blue Shield, for a report of changes contemplated both in subscriber benefits and in fees, including, also, an increase in income level for subscribers below which benefits represent complete fees for services. Consideration is also being given, according to Dr. Simons, to a so-called $5,000 contract providing for considerable increase in benefits and in fees to doctors at a larger cost to subscribers, with the income level considerably higher than the level of the standard contract. Increases are contemplated in maternity benefits, in anesthesia benefits and in some surgical operations. Also, extension of benefits to treatment of sprains and strains with associated x-ray is contemplated.

Dr. Swenson's report and the plans for development of Blue Shield were both unanimously accepted by the delegates.

Speaker Sheppard then called for the reports of the Nominating Committee, Dr. O. M. Heiberg of Worthington, Chairman, and two recommendations, as follows, were proposed by the committee and unanimously accepted:

1. That councilors, in accordance with the change in the By-Laws adopted at this session, submit short biographical sketches with the names of candidates from their respective districts for the office of First Vice President, in advance of the meeting, so that the Nominating Committee may be informed of their qualifications.
2. That one member of the Nominating Committee of the previous year be appointed each year to help maintain continuity.

Nominations were then made as follows. After further nominations were asked for from the floor by the Chair, all were unanimously elected.

President-Elect—Justus Ohage, M.D., St. Paul
First Vice President—Paul C. Leck, M.D., Austin
Second Vice President—Vernon D. E. Smith, M.D., Saint Paul
Secretary—B. B. Souster, M.D., Saint Paul
Treasurer—W. H. Condit, M.D., Minneapolis
Speaker of the House of Delegates—C. G. Sheppard, M.D., Hutchinson
Vice Speaker of the House of Delegates—H. M. Carryer, M.D., Rochester
Councilor—First District—J. Minott Stickney, Jr., M.D., Rochester
Councilor—Second District—R. C. Hunt, M.D., Fairmont
Councilor—Ninth District—A. O. Swenson, M.D., Duluth

George A. Earl, M.D., Saint Paul, was elected delegate to the American Medical Association, as nominated by the Council; also O. J. Campbell, M.D., Minneapolis and F. J. Elias, M.D., Duluth. E. M. Hammes, Sr., M.D., Saint Paul, W. W. Will, MD., Bertha and A. O. Swenson, M.D., Duluth, were elected alternates, respectively, to the delegates as named.

The House of Delegates accepted the invitation of the St. Louis County Medical Society to hold the 1954 annual meeting of the Association in Duluth and, in response to a special request submitted by delegates from the Hennepin County Medical Society, voted to hold its 1955 annual meeting in Minneapolis in recognition of the 100th anniversary of the founding of the Hennepin County Medical Society.

At the request of Dr. A. O. Swenson of Duluth, the House unanimously voted to send a resolution of thanks to Dr. J. M. Waugh of Rochester, retiring councilor of the First District, for valuable and untiring work as Chairman of the Finance Committee of the Council.

The House of Delegates of the 100th Annual session adjourned at 3:20 p.m., May 16, 1953.

✦ Reports and Announcements ✦

AMERICAN COLLEGE OF SURGEONS

The Thirty-ninth Annual Clinical Congress of the American College of Surgeons will be held in Chicago, October 5 to 9, 1953. Headquarters will be at the Conrad Hilton Hotel.

It is estimated that more than 11,000 surgeons, physicians, and others will attend the meeting which will consist of postgraduate courses, forums, symposia, color television programs, and exhibits. Symposia on cancer, trauma, graduate training in surgery, and the surgical specialties will be featured during the week.

Dr. Harold L. Foss, president of The American College of Surgeons, and Sir James Paterson Ross, Vice President of The Royal College of Surgeons, of England, will address the Monday evening meeting. Dr. Fred W. Rankin, Lexington, Kentucky, will be installed as president for the year 1954.

FELLOWSHIPS FOR BASIC RESEARCH IN ARTHRITIS

The Arthritis and Rheumatism Foundation is offering the following research fellowships in the basic sciences related to arthritis:

1. Predoctoral fellowships ranging from $1,500 to $3,000 per annum, depending on the family responsibilities of the fellow, tenable for one year with prospect of renewal.
2. Postdoctoral fellowships ranging from $3,000 to $6,000 per annum, depending on family responsibilities, tenable for one year with prospect of renewal.
3. Senior fellowships for experienced investigation will carry an award of $6,000 to $7,500 per annum and are tenable for five years.

The deadline for applications is November 1, 1953. Applications will be reviewed and awards made by February 15, 1954. For information and application forms, address the Medical Director, The Arthritis and Rheumatism Foundation, 23 West 45th Street, New York 36, New York.

MISSISSIPPI VALLEY TUBERCULOSIS MEETING

Leading authorities on tuberculosis from this country and abroad will appear on the program of the Mississippi Valley Trudeau Society and the Mississippi Valley Conference which will meet October 15, 16, and 17 at the Nicollet Hotel, Minneapolis.

The American Trudeau Society is the medical section of the National Tuberculosis Association. Philip H. Becker, M.D., medical director of the James O. Parramore Hospital, Crown Point, Indiana, is president of the Mississippi Valley branch. Head of the Conference is J. H. Skavlem, M.D., medical director of Dunham Hospital, Cincinnati.

D. G. Madigan, M.D., Kent, England, who founded the unit for chemotherapeutic research in tuberculosis at Farnborough Hospital, is among the outstanding speakers.

Dr. Madigan, a consultant on chest diseases at Farnborough Hospital, will discuss "Old Tuberculin and Bacillary Emulsions Under Chemotherapeutics Cover in Treatment of Tuberculosis." His chemotherapeutic unit began the first clinical trials of streptomycin in Great Britain nine months before the British Medical Research Council's controlled trial was organized. Other chemotherapeutic substances which have been studied by the unit are Sulphetrone, Para-Aminosalicylic acid, Thiosemicarbazones, Viomycin and Isoniazid. He will speak at the Friday afternoon joint session.

Also speaking on this program will be: J. Arthur Myers, M.D., professor of medicine, preventive medicine and public health, University of Minnesota, on "Accomplishments and Future Needs to Eradicate Tuberculosis," and T. A. Duckworth, director of personnel, Employees Mutual Liability Insurance Company of Wisconsin, Wausau, Wisconsin, on "How to Establish an Industrial Health Program."

The program for the medical meeting includes the following: "The Nodular Lesion," by Donald S. King, M.D., president of the American Trudeau Society, Brookline, Massachusetts; "Experiences in the Management of Meningeal and Miliary Tuberculosis," by J. Park Biehl, M.D., and Morton Hamburger, M.D., University of Cincinnati College of Medicine; "Genito-Urinary Tuberculosis," by John Lattimer, M.D., Department of Urology, Columbia University College of Physicians and Surgeons, New York, and "Report of Isoniazid Study by U. S. Public Health Co-operative Group," by Harold G. Curtis, M.D., Sunnny Acres Sanatorium and Western Reserve University, Cleveland.

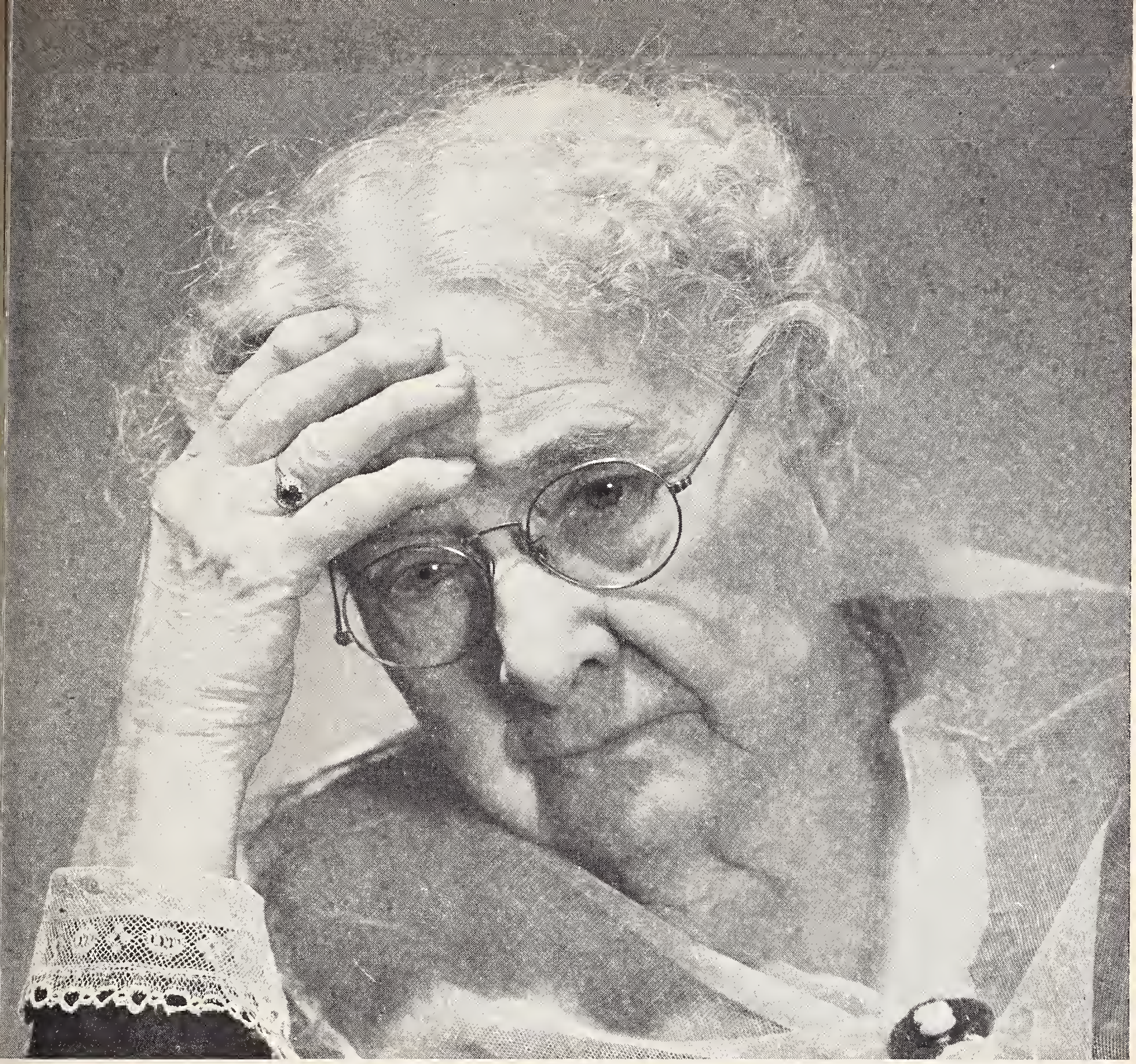
"Tuberculosis Control in Industry," by Dan Morse, M.D., medical director and superintendent, Peoria Municipal Tuberculosis Sanatorium; Harold Vonachen, M.D., medical director, and M. H. Kronenberg, M.D., assistant medical director, Caterpillar Tractor Company, Peoria.

"Bacterial Resistance to Modern Chemotherapeutic Agents," by Alfred G. Karlson, D.V.M., Mayo Clinic, Rochester, and "Esophageal Surgery," by Saul A. Mackler, M.D., Mt. Sinai, Michael Reese and Cook County Hospitals, Chicago.

"Pulmonary Circulation in Mitral Stenosis and Alterations Following Valvulotomy," by J. Gerard Mudd, M.D., St. Louis University, St. Louis; "Surgery of the Mitral Valve," by C. Rollins Hanlon, M.D., professor of surgery, also of St. Louis University, and "Respiratory Acidosis," by William W. Stead, M.D., Fitzsimons Army Hospital, Denver; "Presentation of Cases, Diagnosis and Management of Pulmonary Infiltrates," by William B. Tucker, M.D., and associates, Veterans Administration Hospital, Minneapolis.

All in attendance are invited to attend the Minnesota

(Continued on Page 988)



The inevitable restrictions of advancing years, the reduced activity and a lowered intake of bulk-producing foods all contribute to the high incidence of constipation in older persons.

CONSTIPATION IN THE AGED

Constipation is almost a universal complaint of geriatric patients

Frequently, too, the protracted use of cathartics has left the colon in an atonic state and it is no longer capable of effecting a normal evacuation.

Metamucil has long been recommended for the treatment of constipation in the elderly. A highly refined vegetable product which is free from irritants, Metamucil effects a natural mechanical stimulus in the colon which helps the dysfunctioning muscles to regain and maintain their normal tone.

Metamucil may be safely prescribed for prolonged use without fear of dependence, intestinal irritations or allergic reactions.

Metamucil® is the highly refined mucilloid of Plantago ovata (50%), a seed of the psyllium group, combined with dextrose (50%) as a dispersing agent. It is accepted by the Council on Pharmacy and Chemistry of the American Medical Association.

SEARLE *Research in the Service of Medicine*

Tuberculosis and Health Association's annual dinner, October 15, Coffman Memorial Union, University of Minnesota. A special feature of the program will be a presentation of the popular Minnesota TV program, "The Doctors' Round Table." David T. Carr, M.D., consultant in medicine, Mayo Clinic, Rochester, will be the guest participant and the regular panel members are: Ezra V. Bridge, M.D., superintendent Mineral Springs Sanatorium, Cannon Falls; John F. Briggs, M.D., Saint Paul; J. A. Myers, M.D., professor of medicine, preventive medicine and public health, University of Minnesota, and T. F. Mulrooney of the Minnesota Tuberculosis and Health Association, moderator.

VAN METER PRIZE AWARD

The American Goiter Association again offers the Van Meter Prize Award of Three Hundred Dollars and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. The award will be made at the annual meeting of the Association which will be held in Boston, Massachusetts, April 29, 30 and May 1, 1954, providing essays of sufficient merit are presented in competition.

The competing essays may cover either clinical or research investigations; should not exceed three thousand words in length; must be presented in English, and a typewritten double-spaced copy in duplicate sent to the Corresponding Secretary, Dr. John C. McClintock, 149½ Washington Avenue, Albany 10, New York, not later than January 15, 1954. The committee, who will review the manuscripts, is composed of men well qualified to judge the merits of the competing essays.

A place will be reserved on the program of the annual meeting for the presentation of the Prize Award Essay by the author, if it is possible for him to attend. The essay will be published in the annual proceedings of the Association.

Cook County Graduate School of Medicine

POSTGRADUATE COURSES—1953

SURGERY—Intensive Course in Surgical Technic, two weeks, starting September 14, September 28, October 12
  Surgical Technic, Surgical Anatomy and Clinical Surgery, four weeks, starting October 26
  Surgical Anatomy and Clinical Surgery, two weeks, starting November 9
  Gallbladder Surgery, ten hours, starting October 26
  General Surgery, one week, starting October 5
  Surgery of Colon and Rectum, one week, starting September 21
  Basic Principles in General Surgery, two weeks, starting September 21
  Thoracic Surgery, one week, starting October 12
  Esophageal Surgery, one week, starting October 19
  Breast and Thyroid Surgery, one week, starting October 26
  Fractures and Traumatic Surgery, two weeks, starting October 26
GYNECOLOGY—Intensive Course, two weeks, starting September 21
  Vaginal Approach to Pelvic Surgery, one week, starting November 2
OBSTETRICS—Intensive course, two weeks, starting October 5
DERMATOLOGY—Intensive Course, two weeks, starting October 19
MEDICINE—Electrocardiography and Heart Disease, two weeks, starting October 12
  Intensive General Course, two weeks, starting September 28
  Gastroenterology, two weeks, starting October 26
  Allergy, one month and six months, by appointment
CYSTOSCOPY—Ten-Day Practical Course starting every two weeks
UROLOGY—Intensive Course, two weeks, starting September 28

TEACHING FACULTY—ATTENDING STAFF OF COOK COUNTY HOSPITAL

ADDRESS: REGISTRAR, 707 South Wood Street, Chicago 12, Illinois

CONTINUATION COURSES

The University of Minnesota, in conjunction with the Minnesota Tuberculosis and Health Association, will present a continuation course in *Tuberculosis for Lay Persons* particularly interested in this field. The course will be held at the Center for Continuation Study on the University of Minnesota Campus from October 12 to 14, 1953, and emphasis will be placed on the public health aspect of tuberculosis.

* * *

The University of Minnesota will present a continuation course in *Rehabilitation for General Physicians* at the Center for Continuation Study, October 22-24, 1953. Attention is being focused increasingly on the development of public and private programs in rehabilitation; therefore, this course is particularly timely. The course will deal with the physician's role in the rehabilitation of various types of patients and will provide information concerning agencies which may provide additional help for his patient. The faculty will be headed by Dr. Donald L. Rose, Professor and Head, Department of Physical Medicine and Rehabilitation, University of Kansas School of Medicine, and the program will be presented under the direction of Dr. Frederic J. Kottke, Professor and Head, Department of Physical Medicine and Rehabilitation. The remainder of the faculty will include members of the clinical and full-time staff of the University of Minnesota Medical School and the Mayo Foundation.

* * *

A continuation course in *Medical Jurisprudence for Physicians* will be presented by the University of Minnesota, November 5 and 6, at the Center for Continuation Study. This program has been designed to meet the needs of the physician who wishes to improve his understanding of certain legal aspects of medical practice. Guest speaker for the course will be Dr. Francis J. Gerty, Professor and Head, Department of Psychiatry, University of Illinois College of Medicine, Chicago, and the remainder of the faculty will include members of the faculty of the University of Minnesota. This course will be presented as one of a series of Homecoming Week events which will be of interest to all physicians.

* * *

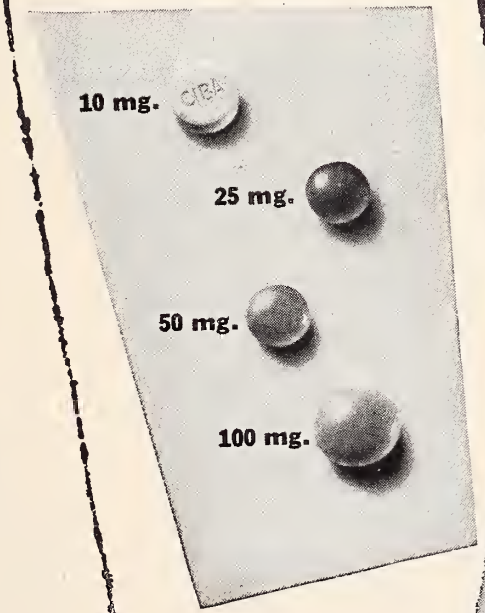
A continuation course in *Fractures* will be presented by the University of Minnesota at the Center for Continuation Study, November 16 to 18, 1953. The program, which is intended primarily for physicians engaged in general practice, will emphasize management of the common types of fractures and some of the complications most frequently encountered. Two outstanding

PRICE REDUCTION

20% PRICE REDUCTION* ON 50-MG. TABLET

20% ADDITIONAL SAVING* WITH NEW 100-MG. TABLET

Now supplied as tablets in 4 different potencies



Ciba

maintenance therapy with

Apresoline®
hydrochloride
(HYDRALAZINE HYDROCHLORIDE CIBA)

now costs less

Advantage may be taken of the economy and convenience of the new high potency 100-mg. tablet for maintenance therapy—provided the patient's particular dosage requirements have first been meticulously determined.

An antihypertensive agent of choice, Apresoline hydrochloride has oral efficacy, relative safety and freedom from toxicity. Even while lowering blood pressure gradually, as it does in the majority of patients, it increases renal blood flow and tends to reduce cerebral vascular tone so that cerebral circulation is not diminished. It constitutes a major advance in the treatment of hypertension.

Ciba Pharmaceutical Products, Inc.
Summit, New Jersey

**(druggist's cost)*

2/1922M

KNOX
GELATINE
Recipe
Book
EAT AND
REDUCE
PLAN

Wide Medical Interest in New Knox Gelatine "Eat and Reduce" Plan

Developed and supervised by competent clinical authority, the new Knox "Eat and Reduce" Plan is intended especially for your overweight patients in otherwise normal health.

The plan has been tested on overweight patients with fine results. In addition, many physicians (and their families) have written us about their gratifying personal results with this plan.

The Knox "Eat and Reduce" Plan is a simple, sensible regimen that places no burden of exercise or hunger on the patient. Quite the contrary, it permits three tempting, solid meals daily, plus between-meal feedings. The menus have been carefully selected so as to provide an abundance of vitamins, minerals and protein. Many of the dishes utilize Knox Gelatine, which is, of course, all protein and no sugar — thus being an effective aid in weight reduction.

KNOX
UNFLAVORED
Nº 1
GELATINE

AVAILABLE AT GROCERY STORES
IN 4-ENVELOPE FAMILY SIZE AND
32-ENVELOPE ECONOMY SIZE PACKAGES.

Knox Gelatine U.S.P.
ALL PROTEIN NO SUGAR

USE THIS COUPON! ***Write today!***
Knox Gelatine, Johnstown, New York Dept. MM

Please send me FREE copies of the "Eat and Reduce" Plan, and Diets.

Name...M.D.

Address..

City..............................Zone..........State....................

guest speakers will participate in the program: Dr. Edwin F. Cave, Chief of Fracture Service, Massachusetts General Hospital, and Associate in Orthopedic Surgery, Harvard University Medical School; and Dr. Walter P. Blount, Consultant in Orthopedics, Milwaukee County Hospital, Milwaukee, Wisconsin. The course will be presented under the direction of Dr. Wallace H. Cole, Professor and Director, Division of Orthopedic Surgery, and the remainder of the faculty will include members of the staff of the University of Minnesota Medical School.

REFRESHER COURSES FOR X-RAY TECHNICIANS

Regional refresher courses in x-ray technique to be held this fall at Crookston, Mankato, Virginia, St. Cloud and Worthington have been announced by the Minnesota Society of X-Ray Technicians which has planned the courses and whose members will serve as instructors. Joining with the Society of X-Ray Technicians as sponsors are the Minnesota Hospital Association, the Minnesota State Medical Association, the Minnesota Radiological Society and the Minnesota Department of Health. The course outline has been developed in cooperation with people in the various regions of the State and every effort has been made to meet the local needs.

All the courses have been planned for week ends to minimize the time spent away from work and will begin on Friday afternoon and end on Sunday afternoon. The schedule of courses is as follows:

Courses will begin Friday afternoon and end Sunday afternoon on the dates indicated.

Crookston, September 4-6, St. Francis Hospital.
Mankato, September 18-20, St. Joseph's Hospital.
Virginia, September 18-20, Virginia Municipal Hospital.
St. Cloud, September 25-27, St. Cloud Hospital.
Worthington, October 2-4, Worthington Municipal Hospital.

Objectives

These refresher courses are being offered to provide an opportunity for those presently engaged in x-ray work to review their techniques and to keep abreast of progress in the field. The courses are not intended to prepare an individual for a career in x-ray technique.

Subject Matter

The subject matter offered has been designed to improve routine techniques. It will be of value to technicians with formal training and/or practical experience whether registered or not. Each person attending will be given an opportunity to discuss his individual technical problems. Registered technicians, experienced in x-ray training programs, will serve as instructors.

Registration

Registration is open to those doing x-ray work in hospitals, clinics and physicians' offices. Tuition fee—$25.00. Send application and fee to Mr. Glen Taylor, Students' Health Service, University of Minnesota, Minneapolis 14. *Make checks payable to the Minnesota Hospital Association.*

Woman's Auxiliary

PRESIDENT SETS DATE FOR SCHOOL OF INSTRUCTION

Mrs. Henry W. Quist, Sr., president of the Woman's Auxiliary to the Minnesota State Medical Association, has announced the date for the fall Board meeting and School of Instruction.

The meeting will be held in the Curtis Hotel in Minneapolis on October 30. Mrs. Quist, in announcing the meeting, urges all Auxiliary members, and especially board members, to make a special effort to attend this important fall planning session. Projects and plans for the coming Auxiliary year will be thoroughly discussed.

Mr. Aubrey D. Gates, Field Director for the Council on Rural Health of the American Medical Association, will be one of the principal speakers at the morning session.

A special treat will be in store for those attending, with the appearance of the President-Elect of the Woman's Auxiliary to the American Medical Association, Mrs. Leo J. Schaefer of Salina, Kansas. Mrs. Schaefer will be one of several distinguished luncheon speakers, and she has expressed a deep appreciation of this invitation to return to Minnesota on this occasion.

Other informed speakers and discussants promise to make the program an interesting and informative one. All Auxiliary members should mark the date, October 30, on their special events calendar, and plan now to attend.

AUXILIARY GIVES EDUCATION MEMORIAL

The Woman's Auxiliary to the Minnesota State Medical Association has recently given a memorial gift to the American Medical Education Foundation in the memory of the late Dr. and Mrs. J. A. Thabes, Sr., of Brainerd. Mrs. Thabes was a former president of the Auxiliary, holding office during 1947-48. Dr. and Mrs. Thabes passed away on June 29, 1953.

Auxiliary members will remember the fine work Mrs. Thabes did during her term of office, as well as throughout her years as a member. It is hoped that the contribution will serve as a reminder of this service to the medical profession performed by Dr. and Mrs. Thabes.

AUXILIARY ROSTER BEING PRINTED

Work is progressing on the preparation of the new roster of board members for the Woman's Auxiliary to the Minnesota State Medical Association. Mrs. F. A. Zinter, roster chairman, reports that the county auxiliaries have responded quite well to her requests for lists of officers. The roster will include all state officers, past presidents and committee chairmen and county presidents and treasurers.

As in the past, the roster will be distributed to board members at the fall school of instruction meeting. If there are any last-minute changes in names or addresses, Auxiliary members are urged to contact Mrs. F. A. Zinter, 2815 N. E. Arthur, Minneapolis, immediately.

THE SHELTERING ARMS
4330 River Road, Minneapolis 6, Minnesota
A HOSPITAL FOR TREATMENT OF POLIOMYELITIS
Acute and Convalescent
Fully Approved by American College of Surgeons
Modern treatment—Staff includes Kenny trained technicians

In Memoriam

ALFRED E. BORGEN

Dr. Alfred E. Borgen, staff member of the Northern Pacific Hospital in Saint Paul, was drowned in Lake Schelin near Duluth, Saturday, August 8, 1953.

Dr. Borgen was thirty-two years old. He was the son of Walter H. Borgen, St. Louis County auditor, and a graduate of the University of Minnesota medical school.

He met his death when the motor boat in which he and three companions were riding was overturned while towing an aquaplane. He was vacationing, at the time, at the home of his parents.

In addition to his parents, Dr. Borgen is survived by two sisters, Mrs. Ruth Rolf of Alborn and Mrs. Harold Cullen of Lynchburg, Virginia.

CARL OLAF ESTREM

Dr. Carl Olaf Estrem died at his home in Fergus Falls after thirty-nine years in the practice of medicine and many years' illness, on June 5, 1953. He was seventy-three years of age.

Dr. Estrem was born at Willmar and was graduated in medicine from the University of Minnesota in 1907.

He was a member of the Park Region Medical Society, the Minnesota State Medical Association and the American Medical Association and a leader for many years in organized medicine in his section of the state.

He is survived by his widow and five children, of whom two, Drs. Robert D. and Ralph E. Estrem, are both physicians practicing in Fergus Falls.

JOEL C. HULTKRANS

Dr. Joel C. Hultkrans of Minneapolis died at St. Barnabas Hospital, Minneapolis, on Monday, July 27, 1953, after an extended illness.

Dr. Hultkrans was fifty-eight years old. He was born in Saint Paul and was graduated from the University of Minnesota medical school in 1921. He specialized in psychiatry and practiced in Saint Paul until 1934 when he moved to Minneapolis. He continued to practice there until his illness and death.

He served in the Army Medical Corps in World War I and was a member of the Central Neuropsychiatric Association, the American Psychiatric Association, the Minnesota Society of Neurology and Psychiatry, the Hennepin County Medical Society, the Minnesota State Medical Association and the American Medical Association. He was also a member of the Rotary club and the Athletic Club of Minneapolis.

Dr. Hultkrans is survived by his wife, Opal; two daughters, Mrs. John O'Connor, Saint Paul, and Mrs. Clyde F. Anderson, Minneapolis; four sisters, Hildur Hultkrans, Evelyn Hultkrans, Mrs. Beda Olson and Mrs. Ebba Hedenstrom, all of Minneapolis; three brothers, Paul, Phil and Dr. R. E. Hultkrans, all of Minneapolis, and six grandchildren.

JOHN A. THABES

Dr. John A. Thabes, for many years identified with the Northern Pacific Beneficial Association Hospital at Brainerd, died on June 29, 1953. By a strange act of fate, his wife followed him a half hour later.

Dr. Thabes was born in Minneiska, Minnesota, December 5, 1872. He obtained his medical education from the University of Minnesota, graduating in 1896. In 1898 he took postgraduate work in the New York Post-graduate Hospital. He began practice in Brainerd in 1882 and carried on an active practice in addition to being largely engaged in the administration of the Northern Pacific Beneficial Association Hospital located in his home city.

Dr. Thabes was married November 12, 1900, to Daisy A. Badeaux. Two children, Dr. J. A. Thabes, Jr., of Brainerd, a son, and Mrs. Lois Adelaide Hensley of St. Louis, Missouri, a daughter, survive Dr. and Mrs. Thabes. On November 12, 1950, the occasion of their fiftieth wedding anniversary, open house was held at their home for some 250 friends who came from near and far.

Dr. Thabes was a member of the Upper Mississippi Medical Society, the Minnesota State Medical Association and the American Medical Association.

ELMER L. HENDERSON

(Continued from Page 972)

cal advances, and which has helped to make this the healthiest, strongest nation on the face of the globe, has been made the first major objective of those ambitious men in Washington who would make the American people walk in lockstep under a rigidly-controlled, government-dominated economy.

"The American medical system has been made a target for the barbs and criticism of a comparatively small group of little men—little men whose lust for power is far out of proportion to their intellectual capacity, their spiritual understanding, their economic realism or their political honesty.

"These men of little faith in the American people propose to place all our people—doctors and patients alike—under a shabby, government-dictated medical system which they call 'Compulsory Health Insurance.' And, this, factually, is Socialized Medicine, regardless of how hard they try to disclaim it.

"I call upon every doctor in the United States, no matter how heavy the burdens of his practice may be, to dedicate himself, not only to the protection of the people's physical health, but also to the protection of our American way of life, which is the foundation of our economic health and our political freedom."

VALLEYVIEW

Hospital and Sanitarium

Jordan, Minnesota

PHONE 254

Located conveniently 22 miles southwest of 50th Street and France Ave. So., Edina, on state highway 169.

Offers unique advantages for the longer term care of non-acute illnesses affecting people of all age groups.

Twin Cities Phone
Bridgeport 2119

ACCIDENT • HOSPITAL • SICKNESS

INSURANCE

For Physicians, Surgeons, Dentists Exclusively

ALL PREMIUMS COME FROM — PHYSICIANS SURGEONS DENTISTS — ALL CLAIMS GO TO

$5,000 accidental death $25 weekly indemnity, accident and sickness	Quarterly $8.00	$15,000 accidental death $75 weekly indemnity, accident and sickness	Quarterly $24.00
$10,000 accidental death $50 weekly indemnity, accident and sickness	Quarterly $16.00	$20,000 accidental death $100 weekly indemnity, accident and sickness	Quarterly $32.00

COST HAS NEVER EXCEEDED AMOUNTS SHOWN

ALSO HOSPITAL INSURANCE

	Single	Double	Triple	Quadruple
60 days in Hospital	5.00 per day	10.00 per day	15.00 per day	20.00 per day
30 days of Nurse at Home	5.00 per day	10.00 per day	15.00 per day	20.00 per day
Laboratory Fees in Hospital	5.00	10.00	15.00	20.00
Operating Room in Hospital	10.00	20.00	30.00	40.00
Anesthetic in Hospital	10.00	20.00	30.00	40.00
X-Ray in Hospital	10.00	20.00	30.00	40.00
Medicines in Hospital	10.00	20.00	30.00	40.00
Ambulance to or from Hospital	10.00	20.00	30.00	40.00
COSTS (Quarterly)				
Adult	2.50	5.00	7.50	10.00
Child to age 19	1.50	3.00	4.50	6.00
Child over age 19	2.50	5.00	7.50	10.00

$4,000,000.00
INVESTED ASSETS

PHYSICIANS CASUALTY ASSOCIATION
PHYSICIANS HEALTH ASSOCIATION
51 years under the same management
400 First National Bank Building
Omaha 2, Nebraska

$19,500,000.00
PAID FOR CLAIMS

$200,000.00 deposited with State of Nebraska for protection of our members

◆ Of General Interest ◆

The American Hearing Society which has had offices in Washington, D. C., since 1922, is moving to Columbus, Ohio, in the immediate future, according to an announcement made by Dr. Thomas L. Tolan, a Milwaukee otologist, president of the agency. Affiliated with the society are 115 local chapters in thirty-four states, the District of Columbia, and Canada. The organization is supported by membership dues from individuals and chapters and contributions of individuals and Community Chests. The Society serves as a clearing house for information relating to hearing and sponsors periodic audiometer tests for school children.

* * *

The Trustees of one of America's oldest medical essay competitions, the **Caleb Fiske Prize** of the Rhode Island Medical Society, announce as the subject for this year's prize dissertation, "Recent Advances in Cardiac Surgery." The dissertation must be typewritten, double spaced, and should not exceed 10,000 words. A cash prize of $250 is offered.

For complete information regarding the regulations, write to the secretary, Caleb Fiske Fund, Rhode Island Medical Society, 106 Francis Street, Providence 3, Rhode Island.

* * *

Dr. Daniel H. Bessesen, of Buffalo Lake, opened offices in Danube, in July. Dr. Bessesen will continue his office hours in Buffalo Lake and Olivia as before.

* * *

Dr. George Martin, a graduate of the University of Illinois Medical School, and **Dr. John F. Kane,** a graduate of Marquette University School of Medicine and a diplomate of the American Board of surgery, became associated with **Dr. H. A. Hartfiel** in the Hartfiel Medical Center in Montevideo, in July.

* * *

Dr. Franklin Sidell, of Minneapolis, began practice in the Belgrade Community, July 15. Dr. Sidell has been practicing in Minneapolis for the past six months.

* * *

Dr. Asher A. White, of Minneapolis, was re-elected president of the Hennepin County Tuberculosis Association, and **Dr. Robert N. Barr,** of the Minnesota Department of Health, vice president, at the annual meeting held July 31, in Minneapolis.

* * *

Dr. A. J. Houglum, recently separated from the army, began practice with his brother-in-law, **Dr. A. S. Midthune,** in Lake Park, in July. Dr. Houglum, a graduate of the University of Minnesota Medical School, served in World War II as a pilot in the South Pacific; during the Korean conflict, Dr. Houglum served as a flight surgeon in Japan and Korea.

* * *

Dr. Roy H. Good, recently completed his internship at Minneapolis General Hospital and joined the Caledonia Clinic, Caledonia, in July. Dr. Good is associated in practice with **Dr. J. J. Ahlfs.**

* * *

Dr. Jack Guy, of New London, left in July to enter the United States Public Health Service. Dr. Guy is stationed at the White Earth Hospital at Detroit Lakes.

* * *

Dr. William C. Woyda, a 1952 graduate of the University of Minnesota Medical School, who recently completed his internship at Minneapolis General Hospital, joined the medical partnership of **Drs. A. J. Roehlke** and **G. H. Tesch** at Elk River, in July.

* * *

Dr. Edward G. Burleigh, a graduate of the University of Louisiana Medical School, and **Dr. Jack Bonner,** a graduate of the University of Minnesota Medical School, joined the More Hospital staff at Eveleth, in July. Dr. Burleigh was married September 19, to Florence Marilyn Benassi, of Duluth.

* * *

Dr. Thomas J. Dry, chief of the cardiology section of the Mayo Clinic, and **Dr. Charles F. Code,** chief of physiology at the Mayo Clinic, were featured speakers at the dinner for new fellows of the Mayo Foundation held in the Mayo Foundation House, July 23. More than 100 physicians, including new fellows of the Mayo Foundation and fellows who have recently returned from military service, attended the dinner. **Dr. Clay Klakeg,** vice president of the Fellows' Association, was master of ceremonies.

* * *

Dr. George C. Doxsee, of Monticello, Iowa, who recently completed his internship at St. Luke's Hospital, in Duluth, joined the Mesaba Clinic at Chisholm, July 6.

* * *

Dr. Richard F. Kline has given up his practice of medicine in Grand Rapids to become associated with **Dr. W. W. Rieke,** of Wayzata. Dr. Kline is filling a vacancy which occurred when Dr. Rieke's associate, **Dr. David W. Feigal,** entered the Armed Forces the end of June.

* * *

Physicians, hospitals, and universities of Israel are very desirous of obtaining medical books of all kinds, provided they have been published since 1940 and are in good condition. Besides books on internal medicine and surgery, those on anatomy, bacteriology, biochemistry, biology, chemistry, endocrinology, gynecology, hospitals, industrial medicine, pathology, pharmacology, nursing, and dentistry are desired.

The Stability . . .

OF INCOME

One characteristic usually associated with a bond is that it has an established rate of interest; the investor therefore can compute the annual income he may expect from the date of purchase to the date of final maturity. A bond, like a note or mortgage, is a promise to pay a stipulated amount at a designated future date with interest to accrue in the meantime. This provides STABILITY OF INCOME—once a sound investment is made the annual income is fixed and is not altered by changing economic conditions or market fluctuations.

During the past several years, however, this STABILITY OF INCOME has been impaired by increasing Federal income taxes. The income that invested savings earn, when subject to such taxes, does not enjoy complete STABILITY OF INCOME since a change in the tax rate requires an adjustment in actual "spendable" income received—if taxes rise the effective income is reduced.

Because the income from Municipal Bonds is exempt from present Federal income taxes, Municipal Bonds enjoy a STABILITY OF INCOME not available to investments having taxable income.

We invite you to investigate the advisability of placing your savings in Municipal Bonds, one of the oldest and most widely employed means of investment, and we suggest you write for information and an example of Municipal Bonds currently available for your investment funds.

JURAN & MOODY

MUNICIPAL SECURITIES EXCLUSIVELY

TELEPHONES:
GArfield 9361
PRior 6423

93 E. SIXTH STREET
ST. PAUL 1, MINNESOTA

Books should be sent post-paid, at the special rate of eight cents for the first pound and four cents for each additional pound and marked book-rate, to: Books for Israel, 115 King Street, New York 1, New York. Funds for shipment from New York to Israel have been provided under Point IV, U. S. State Department, sponsors of the project.

* * *

Dr. Richard Allison DeWall, who recently completed his internship at the United States Public Health Service Hospital, Staten Island, New York, became associated with the Mork Clinic at Anoka, September 1.

Dr. Richard A. Williams, who was graduated from the University of Iowa Medical School, and recently completed his internship at St. Luke's Hospital in Duluth, began practice in Rothsay in late July. The community of Rothsay has been without a physician for a number of years.

* * *

A life-size bronze statue of **Edith Graham Mayo,** wife of Dr. Charles H. Mayo, was unveiled at a short ceremony held on St. Mary's Hospital grounds at Rochester, August 3. The statue of Mrs. Mayo in her uniform as Rochester's first "trained nurse" was sculptured by her granddaughter, Mayo Elwinger

COOPER CREME
TRADE MARK
The original vaginal creme
ACCEPTED COUNCIL ON PHARMACY AND CHEMISTRY
FORMULA:
Trioxymethylene

For

BETTER
Birth
Control

Since 1934

No Finer Name in Contraceptives...

A product of
WHITTAKER LABORATORIES,
PEEKSKILL, N.Y.

Active Ingredients
Trioxymethylene 0.04%
Sodium Oleate 0.67%

AT YOUR CONVENIENCE, DOCTOR . . .

you are cordially invited to visit our new and modern prescription pharmacy located on the street floor of the Foshay Tower, 100 South Ninth Street.

With our expanded facilities we will be able to increase and extend the service we have been privileged to perform for the medical profession over the past years.

Exclusive Prescription Pharmacy

Biologicals Pharmaceuticals Dressings
Surgical Instruments Rubber Sundries

JOSEPH E. DAHL CO.
(Two Locations)
100 South Ninth Street, LaSalle Medical Bldg.
ATlantic 5445 Minneapolis

Kooiman, and has been presented to St. Mary's Hospital by the Mayo family.

* * *

Dr. E. Q. Ertel, of Ellendale, and **Dr. B. Melby,** of Blooming Prairie, were honored by the members of the Steele County Medical Society at a dinner held at the Hotel Owatonna, July 8. The dinner was held in recognition of the two physicians' fifty years of medical practice. **Dr. R. J. Wilkowske** was toastmaster at the dinner and speakers, besides Drs. Ertel and Melby, included **Dr. E. W. Senn,** who received similar fifty-year recognition two years ago, and **Dr. Ernest J. Nelson,** of Faribault, former Owatonna practitioner.

* * *

Dr. Wallace W. Lueck and **Dr. George Weldon Lund,** of Minneapolis, were among 284 new fellows elected to the American Academy of Pediatrics in July.

* * *

Dr. Eugene E. Scott, chief of staff at St. Joseph's Hospital, Saint Paul, dedicated a bronze plaque to the Sisters of St. Joseph, Sunday, July 19, in recognition of their services to the community.

* * *

Dr. James H. Dokken, a recent graduate of the University of Minnesota Medical School, joined **Dr. L. J. Hoyer,** of Windom, in his practice, in July.

* * *

The Crystal Clinic at Crystal Bay held an official opening July 15, although **Dr. B. H. McLaughlin,** formerly of Minneapolis, and **Dr. C. O. Robinson,** formerly of Saint Paul, have been using part of the clinic facilities since July 1. A pediatrician and an obstetrician are expected to join the clinic eventually.

* * *

Dr. Walter F. Larrabee, Jr., of Detroit, was appointed assistant medical director of Minnesota Mutual Life Insurance Company, in July. Dr. Larrabee, a specialist in internal medicine, was graduated from the University of Minnesota Medical School and did graduate work at the Mayo Foundation.

* * *

It recently has been announced that **Dr. Francis R. Manlove,** former fellow in medicine of the Mayo Foundation, has been appointed director of the University of Colorado Medical Center in Denver, dean of the department of medicine and professor of medicine. Dr. Manlove has been associate secretary of the Council on Medical Education and Hospitals of the American Medical Association.

* * *

Dr. William Carr, who recently completed his internship at St. Luke's Hospital in Duluth, began practice in Minneapolis—3338 LaSalle Building—in late July. Dr. Carr is a veteran of World War II and a graduate of the University of Minnesota Medical School.

* * *

Dr. Roger S. Johnson and **Dr. Melvin G. Oppen,** began practice with offices in the Sampson Building, Excelsior, early in August. Dr. Johnson and Dr.

. . . now conveniently located for faster service

You need no longer risk driving through congested traffic to examine new equipment. In this new, modern store you will find complete stocks of instruments and supplies for the physician; model displays of hospital equipment of every type; and a comprehensive range of equipment, apparatus and supplies for the modern medical laboratory. We cordially invite you to visit us at your convenience, or call us for prompt emergency service. Free parking is provided adjacent to building. Telephone: LIncoln 7601.

ALOE
A. S. ALOE CO.

a. s. aloe company OF MINNESOTA • 927 Portland Ave. • Minneapolis 4, Minn.

Oppen, both graduates of the University of Minnesota Medical School in 1950, and veterans of World War II, have been associated in medical practice for the past fifteen months in Deephaven.

* * *

Dr. William Kosiak and **Dr. Robert H. Painter,** of Two Harbors, attended the Co-operative Health Federation of America convention held in St. Louis, Missouri, June 28 to July 1.

* * *

Dr. Walter C. Alvarez, who was a member of the staff of the Mayo Clinic from 1926 until 1950, now of Chicago, is the author of *Danger Signals,* a medical book for the general public. The book, containing a glossary in which technical terms used in medicine are explained to the reader, treats of such conditions as disturbances of the nervous system, pain and headache as signals of distress, heart disease, high blood pressure, cancer and harmless growths, arthritis, diseases of the lungs and digestive tract, diseases of women, and miscellaneous conditions.

* * *

Dr. Paul Z. Bauer, of Saint Paul, and **Dr. Donald A. Linbeck,** formerly of Lincoln, Nebraska, joined the staff of the Fergus Falls State Hospital July 15. Dr. Bauer, who is a graduate of the University of Minnesota Medical School, completed his internship in St. Barnabas Hospital, Minneapolis, and served with the armed forces for twenty-four months in Korea. Dr. Linbeck, a graduate of the University of Nebraska Medical School, also completed his internship at St. Barnabas Hospital, in Minneapolis, and served with the army in Korea.

* * *

Dr. Carl O. Bretzke, of Duluth, joined **Dr. L. H. Klefstad** in his practice in the Klefstad Clinic at Greenbush, July 15. Dr. Bretzke was graduated from the University of Minnesota Medical School and completed his internship at St. Luke's Hospital in Duluth.

* * *

Dr. Frank Carthey, a recent graduate of the University of Minnesota Medical School, became associated with the Seifert Clinic in New Ulm, in July. Dr. Carthey served as a Marine during World War II.

* * *

Dr. Edward H. Mandell, assistant chief of the professional services division of the Minneapolis Veterans Administration Hospital, was appointed manager of the Saginaw, Michigan, Veterans Hospital, in July.

* * *

Dr. Edward H. Leveroos, originally of Superior, has been appointed to the new position of director of the division of hospitals and graduate education of the American Medical Association's Council on Medical Education and Hospitals. Dr. Leveroos now lives in Oak Park, Illinois.

The completely new . . .

A
B
C
D
E
ALL AMERICAN* athletic glasses
designed for rough treatment

A. EXTRA STURDY ALL-METAL FRAME
B. "CUSHION FIT" SHOCK ABSORBENT RUBBER NOSE PIECE
C. ENDS COVERED TO PROTECT OTHER PLAYERS
D. SAFETY PRESCRIPTION LENSES WITH HIGH BASE CURVE
E. EXPANSIBLE, ADJUSTABLE "GLASS GARD"* HEADBAND

- One Price for All Prescriptions up to and Including 7 Diopters—Case Included
- Order Complete Sample Available at Nominal Cost or Write for Further Information

*Pat. Pend.

Since 1913 Benson OPTICAL COMPANY EXECUTIVE OFFICES MINNEAPOLIS, MINNESOTA

Complete Laboratories in Minneapolis and Principal Cities of Upper Midwest

BROWN & DAY INC SAINT PAUL U.S.A. SERVICE QUALITY

For

Professional Supplies

and

Service

BROWN & DAY, INC.

St. Paul 1, Minnesota

Dr. C. L. Sherman, of Luverne, was re-elected for the thirty-ninth time as president of the Southwestern Minnesota Sanatorium Commission, in July. Dr. Sherman was first elected when the Commission was organized in July, 1915.

* * *

Dr. A. A. Brink, of Baudette, accepted the chairmanship of the Lake-of-the-Woods County Heart Association, the purpose of which is to raise funds for research and equipment that will aid in the treatment of various heart ailments.

* * *

Dr. Charles W. Mayo, of Rochester, was nominated July 27, by President Eisenhower, to be an alternate delegate to the eight session of the United Nations General Assembly.

* * *

Eight patients who were still under care at the **Ramsey County Children's Preventorium** at Lake Owasso, were moved to Ancker Hospital, Saint Paul, in July, and the Preventorium closed.

* * *

Dr. A. L. Vadheim, of Tyler, was honored August 10 by the community members holding "Vadheim Appreciation Day." The celebration marked the forty-third anniversary of Dr. Vadheim's arrival in Tyler. Besides working as a physician, Dr. Vadheim has been active in community affairs—he served as mayor, as a member of the school board, has been active in the Boy Scout work and assisted in establishing the library. As Red Cross director for Lincoln County, he brought the county national honor in 1941 when it became the first in the world to become accredited for the control of tuberculosis.

* * *

Dr. Joe R. Brown, of Rochester, left in July for Europe, where he will present a paper at the Sixth International Congress of Neurology at Lisbon, Portugal, in September. Dr. Brown will also visit and observe in neurologic centers in other European countries and attend a meeting in Munich of German neurologists.

* * *

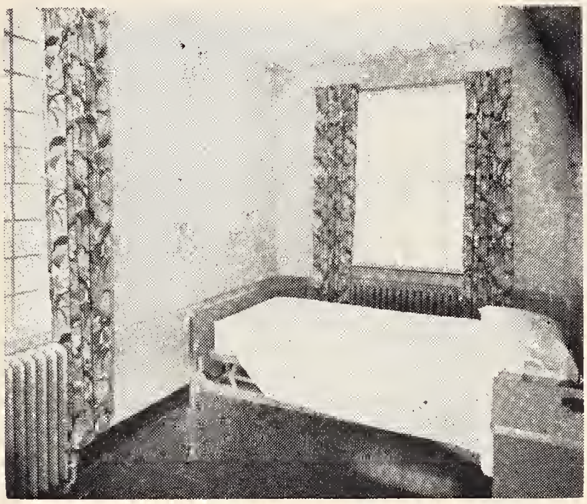
Dr. J. S. Blumenthal, of Columbia Heights, professor of Medicine, University of Minnesota Medical School, was interviewed over WDGY radio station, July 23, on the program "Let's Talk It Over." Dr. Blumenthal spoke on allergies.

* * *

Dr. Walter S. Neff, a member of the board of directors of the Minnesota Heart Association, was presented with a merit award by the Heart Association, July 8. The personal presentation of the award was made by G. Ray Higgins, Saint Paul, executive secretary of the Association.

* * *

Attendance at medical short courses at the University of Minnesota's Center for Continuation Study increased 19 per cent during the 1952-1953 academic year, **Dr. Robert B. Howard,** director of the continuation medical study at the University, announced in his annual report which was released in July.



CRESTVIEW

Typical Semi-private Room

SAINT PAUL'S most complete, exclusive, NEUROPSYCHIATRIC HOSPITAL

Ultra modern facilities and comforts at the lowest cost to patients.

- Occupational therapy and recreational department.
- Complete X-ray and laboratory.
- Electrocardiography—basal metabolism.
- Electroencephalography available.
- All patients' rooms air-conditioned.
- Background music and psychotherapy sound equipment.
- Medically staffed by every neurologist and psychiatrist in Saint Paul.
- Especially trained nursing staff.

Send for photo booklet and rates.

APPROVED by the Minnesota State Medical Association and the Ramsey County Medical Society.

MEMBER of the American Hospital Association.

MEMBER of the Minnesota Hospital Association.

CRESTVIEW HOSPITAL, 145 W. College Ave., Garfield 5841, St. Paul

A non-profit organization.

Dr. Albert E. Krieser, for the past three and a half years associated with the State of Minnesota, Department of Public Welfare, in offices at Anoka, began practice in Minneapolis with **Dr. H. D. Good** and **Dr. L. J. Roberts,** July 1.

* * *

Dr. Robert H. Nelson and **Dr. Warren Kilmer** opened offices in the International State Bank Building in Littlefork, in July. Dr. Nelson served four years in the Navy and was graduated from the University of Minnesota Medical School in 1952. Recently, he completed his internship at St. Luke's Hospital in Duluth. Dr. Kilmer spent four years in the Army and was graduated from the University of Indiana Medical School in 1952. He recently completed his internship at the Indianapolis General Hospital, Indianapolis, Indiana.

* * *

Dr. M. C. Petersen, of the Rochester State Hospital staff, gave the welcome address and **Dr. Conrad Baars,** also of the State Hospital, acted as the master of ceremonies at the exercise honoring fifty-three psychiatric aids who have completed a year of classes and training at the Rochester State Hospital. This is the third group of psychiatric aids to receive certificates and pins.

* * *

Dr. Helen L. Knudsen, hospital services director of the Minnesota State Health Department, was among those named to a national study group which will survey design and construction of hospital facilities for chronically ill patients. The committee will prepare a report for the National Commission on Chronic Illness which is to meet in Chicago, March 18 to 20, 1954.

* * *

Dr. Martin Enderling, a fellow in the Mayo Foundation who is also an internationally known ice skater from Zurich, Switzerland, was the featured skater at the Rochester "Winter Wonderland" ice carnival held August 5.

* * *

The Koffee Klub of Sandstone served coffee and birthday cake at the Colonial Hotel, August 3, honoring **Dr. H. P. Dredge,** of Sandstone, on his eighty-third birthday.

* * *

Dr. L. H. Klefstad, of Greenbush, and **Dr. David O. Berge,** of Roseau, were named to the medical advisory committee of the Roseau County Chapter of the National Foundation for Infantile Paralysis, at the meeting held in July.

* * *

Dr. John J. Stransky, recently separated from the U. S. Air Force, became associated in practice with **Dr. H. A. Wenter** and **Dr. James R. Doyle,** of Rochester, in August.

* * *

Dr. Robert Dornbach, of Minneapolis, joined **Dr. M. H. Seifert** and **Dr. J. A. DuPont,** in their practice in Excelsior, in August.

The Birches Sanitarium, Inc.

2391 Woodland Avenue
Duluth 3, Minnesota

A hospital for the care and treatment of Nervous and Mental disorders. Quiet, cheerful environment. Specially trained personnel. Recreational and occupational therapy.

Dr. L. R. Gowan, M.D., M.S., Medical Director

Dr. Kenneth G. Henry, who recently completed his internship at Ancker Hospital, Saint Paul, became associated in practice with **Dr. D. H. Dewey**, of Owatonna, in August.

* * *

Dr. L. E. Karges, after two years of service with the army medical corps, returned to his practice in Grand Rapids in August.

* * *

Dr. Oliver M. Porter, of Willmar, left in August to return to Sisseton, South Dakota, where he practiced before coming to Willmar six years ago.

* * *

Dr. G. B. Stickler, a fellow in pediatrics at the Mayo Foundation, formerly of Germany, was the guest speaker at the weekly meeting of the Rochester Lions Club, held August 5. Dr. Stickler spoke on "Pre-War and Post-War Germany."

* * *

Dr. John C. Wohlrabe, who recently completed his internship at Memorial Hospital, Phoenix, Arizona, opened an office for the practice of medicine in St. Clair, Minnesota, July 15. Mrs. Wohlrabe, the former Lillian A. Haar, a graduate of Minneapolis General Hospital School of Nursing, is assisting her husband in his office.

Dr. Wohlrabe is the son of **Dr. and Mrs. Clarence F. Wohlrabe**, of Mankato. He was graduated from the University of Minnesota Medical School and is a veteran of World War II.

MINNESOTA BLUE CROSS-BLUE SHIELD

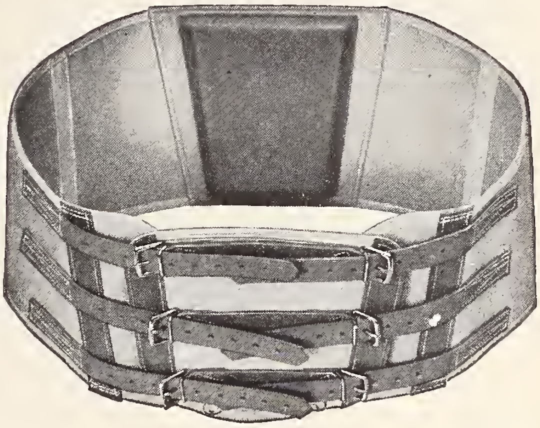
During the past thirty days, the Blue Shield claims rejections have been closely examined to determine the number disallowed for each specific reason. The results disclose that non-hospitalized medical care and the x-rays related to such care were the reasons for the majority of the rejections during the period. This was also brought out in a similar study several months ago. Further, the correspondence and telephone calls with doctors' offices also indicate some lack of understanding of this feature of the contract.

The Blue Shield contract provides benefits for the three general basic services rendered by doctors of medicine. These are surgical, in-hospital medical, and obstetrical services. On the other hand, the contract does not provide benefits for medical treatment in the home or office. Thus, home and office calls where medical care is administered cannot be the basis for an eligible Blue Shield claim. Medical care in the office or home includes not only care for the common medically treated conditions such as colds and virus infections, but it also embraces many injuries received accidentally. Such injuries might be, for example, contusions, hematomas, and abrasions in which no actual surgical procedure is necessary. It will be seen, then, that the controlling factor in determining the eligibility of services rendered in the office is not the fact that the treatment was necessitated by an accident, but rather that a surgical procedure was actually

HOMEWOOD HOSPITAL is one of the Northwest's outstanding hospitals for the treatment of Nervous Disorders—equipped with all the essentials for rendering high-grade service to patient and physician.

Operated in Connection with
Glenwood Hills Hospitals

HOMEWOOD HOSPITAL
Corner Penn and Plymouth Avenues North
Minneapolis Minnesota



Popular Type **SACRO-ILIAC BELT**

This high-grade sacro-iliac support is made of orthopedic webbing, 6 inches wide, well reinforced and supplied with perineal straps.

To determine size needed, take measurements around hip, 3 inches below the iliac crest. Stock sizes 30 to 44. Extra sizes available on special order.

Professional Price $5.95

Abdominal Supporters *Elastic Stockings* *Trusses*

C. F. ANDERSON CO., INC.

Surgical and Hospital Equipment

ATlantic 6508, ZEnith 2055 **901 Marquette Ave.**

MINNEAPOLIS 2, MINNESOTA

rendered. While it is true that the surgical office treatment of many accidental injuries is covered by the Blue Shield contract, the fact that the injuries were received by accidental means does not alone control the validity of the claim.

In many instances where accidental injuries are treated in the offices, an x-ray examination is made prior to the treatment to determine whether there is a fracture or other undisclosed condition. X-rays taken in a doctor's office for diagnostic purposes are rated as Blue Shield benefits when, as stated in the contract, those x-rays are directly related to one of the basic services paid for by Blue Shield. In other words, the x-ray must be a part of an over-all claim which is itself eligible for payment under the contract before the x-ray can be considered a valid claim. Thus, when a condition is treated medically in the home or the office and it has been preceded by diagnostic x-rays, it is obvious that those x-rays are not directly related to a compensable Blue Shield service and, therefore, are not eligible for benefits. Under these circumstances, the most important single factor in determining the validity of a claim for x-rays is to determine whether it is a part of a claim wherein surgical, in-hospital medical, or obstetrical care has been rendered. If the x-rays precede or follow such care within a period of approximately thirty days and are directly related to it, then the x-rays taken in the doctor's office are eligible for benefits as a part of a compensable basic-service claim.

It is recognized that most of the care provided in the home or the office is relatively inexpensive in an individual case when compared to in-hospital medical, surgical, or obstetrical care. By the same token, it is established that home and office calls for examinations and medical advice occur with great frequency so that when they are considered on a collective basis, the cost of providing such services for a large group of people is very high. Consequently, it is obvious that the small monthly premium charged Blue Shield subscribers does not provide enough money to pay for the services now included under the contract plus home and office calls for medical care. As a result, it has seemed best to allow the subscriber to pay such small items and to devote most of the premium income to the more expensive items such as surgery, fractures, obstetrics, and medical care in the hospital. Carrying out such a program on this principle should avoid the pitfalls which have plagued some government-controlled plans which provide full coverage.

Television Show Proves Perfect Sales Medium

The response to the television program, "News at Noon" over WCCO-TV, from Minnesota physicians, hospitals, and the public is very gratifying, both from an institutional and inquiry point of view.

Almost everyone is interested in a news program and the delightful, sincere delivery of Charles McCuen, the News Director of WCCO-TV, has proven without a doubt that he is one of the leading news personalities of the day.

The fact that the news program is in the middle of the day when the listening audience is mostly women, serves to attract the housewife's attention in the belief that even though she may not be the breadwinner of the family, she is very interested in the health of her family. All cases reported are actual testimonials received from Minnesota subscribers.

Each hospitalization is different in respect to services required, and through the wide range of illnesses the program points out how necessary Blue Cross and Blue Shield are to a family.

Because of the response noted through our daily inquiry count on our television broadcasts, Blue Cross and Blue Shield are now sponsoring the "News at Noon" with Charles McCuen over Channel Four, WCCO-TV, 12:00 noon to 12:15, five days a week, Monday through Friday.

HOSPITAL NEWS

The new thirty-two bed hospital at *Madison* was officially opened in August, with dedication ceremonies and conducted tours of the new building beginning at 1 p.m., Sunday, August 16. The cost of the structure and equipment was more than $560,000, 45 per cent paid by federal funds and 55 per cent by the Madison Hospital Association.

* * *

Dedication ceremonies for the new *St. Francis Hospital* at Shakopee were held Sunday, August 23, with Archbishop John Gregory Murray of Saint Paul, giving the dedicatory address. Following the dedication ceremony, open house and conducted tours of the fifty-bed hospital were held for community members. The Sisters of St. Francis will administrate and partially staff the hospital.

Listed on the active medical staff are Dr. M. B. Hebeisen, chief of staff, Chaska; Dr. F. H. Buck, Dr. Ivy Heinz, Dr. L. H. Heinz, Dr. B. F. Pearson, and Dr. J. E. Ponterio, all of Shakopee; Dr. C. J. Olson, Belle Plaine; Dr. G. Schimpelfenig, and Dr. B. H. Simons, of Chaska, and Dr. P. Stahler, of Jordon.

HELP FOR PROBLEM DRINKERS

Hazelden Foundation (non-profit) is dedicated to the treatment of problem drinking through research, education, and rehabilitation. It has ideal facilities on Lake Chisago near Center City, Minn. Your inspection is invited at any time.

HAZELDEN FOUNDATION

Let us send you complete information

A NON-PROFIT ORGANIZATION

2639 University Avenue
24-hour service

St. Paul 14, Minnesota
Phone NEstor 5958

THE
MEDICAL PROTECTIVE COMPANY
FORT WAYNE, INDIANA

PROFESSIONAL PROTECTION
EXCLUSIVELY
SINCE 1899

specialized service
assures *"know-how"*

MINNEAPOLIS Office:
Robert L. McFerran, Rep.,
2426 Clinton Ave. So., Apt. E-8,
Telephone Fillmore 1292

RADIUM RENTAL SERVICE
4340 CEDARWOOD ROAD
MINNEAPOLIS 5, MINNESOTA
TEL. ATLANTIC 5297

Radium element prepared in type of applicator requested

ORDER BY TELEPHONE OR MAIL
PRICES ON REQUEST

North Shore Health Resort

Winnetka, Illinois

on the Shores of Lake Michigan

A completely equipped sanitarium for the care of nervous and mental disorders, alcoholism and drug addiction offering all forms of treatment, including electric shock.

SAMUEL LIEBMAN, M.S., M.D.

225 Sheridan Road **Medical Director** **Phone Winnetka 6-0211**

BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical Libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

SURGICAL PATHOLOGY. Lauren V. Ackerman, M.D. Professor of Surgical Pathology, Washington University, School of Medicine; Surgical Pathologist, Barnes Hospital and Affiliated Hospitals, St. Louis; Consultant to the Ellis Fischel State Cancer Hospital, Columbia, Missouri; Consultant to the Armed Forces Institute of Pathology. 836 pages. Illus. Price $14.50, cloth. St. Louis: C. V. Mosby Co., 1953.

MAY'S MANUAL OF THE DISEASES OF THE EYE. 21st Edition. Revised and edited by Charles A. Perera, M.D. Associate Clinical Professor, College of Physicians and Surgeons, Columbia University, New York; Attending Ophthalmologist, Presbyterian Hospital, New York. 512 pages. Illus. Price $6.00, cloth. Baltimore: Williams & Wilkins Co., 1953.

ARTIFICIAL LIMBS

ORTHOPEDIC APPLIANCES

TRUSSES

SUPPORTERS

ELASTIC HOSIERY

FREJKA

Abduction Pillow Splint by the Original Maker

For displasia of the hip in the new-born and in early postnatal life (as described by Dr. V. L. Hart, Journal of Bone and Joint Surgery, Vol. 31-A, pp 357-372, April, 1949).

Prompt, painstaking service

BUCHSTEIN-MEDCALF CO.

223 So. 6th Street **Minneapolis 2, Minn.**

P&H®

A Complete Service

FOR THE MEDICAL AND HOSPITAL PROFESSION

Physicians & Hospitals Supply Company, Inc.

1400 Harmon Place ● Minneapolis 15, Minnesota

EXTRAPULMONARY INTRATHORACIC TUMORS

(Continued from Page 960)

neuroblastomas; one of the three patients had a tumor of the dumbbell type for which laminectomy and mediastinotomy were required. Two of the seven patients had teratoid tumors, of which one was benign and one had undergone malignant change. One patient had a thymoma, and one a hemangio-endothelioma. Two hundred and five patients recovered from operation.

The series of 212 cases does not include the cases in which operations were performed for intrathoracic lesions of the esophagus, such as leiomyoma or reduplication of the esophagus, diaphragmatic hernia of congenital type in which the omentum is the only structure involved in the hernia, or hernias through the dome of the right side of the diaphragm which have placed a portion of the liver in the right side of the thoracic cavity.

In closing, I should like to emphasize that many different types of lesions occur within the thoracic cavity and that all of these lesions demand careful consideration regardless of whether or not they are producing symptoms. Some of these lesions require surgical treatment and some lesions require other types of treatment. The many problems associated with the establishment of a definite diagnosis and in the selection of the type of treatment to be instituted are best solved by close co-operation between the clinician, bronchoscopist, roentgenologist and the surgeon. The most important consideration of intrathoracic extrapulmonary tumors is that malignant lesions often cannot be differentiated from benign lesions and that all of these growths are potentially malignant. Their early recognition with complete surgical removal is their most effectual treatment.

STOP . . .
BEFORE YOU BUY
YOUR NEW CAR—
SEE US . . .
we can save you money on the finance charge.
AMERICAN
NATIONAL
BANK
OF SAINT PAUL
Bremer Arcade Robert at 7th CE 6666
Member Federal Deposit Insurance Corporation

RADIUM & RADIUM D+E
(Including Radium Applicators)
FOR ALL MEDICAL PURPOSES
Est. 1919
Quincy X-Ray and Radium Laboratories
(Owned and Directed by a Physician-Radiologist)
Harold Swanberg, B.S., M.D., Director
W.C.U. Bldg. Quincy, Illinois

Hall, Anderson & Nordehn
PRESCRIPTION PHARMACY
BIOLOGICALS
PHYSICIANS' SUPPLIES
SAINT PAUL, MINN.
LOWRY MEDICAL ARTS BUILDING
TELEPHONE: CEDAR 2735

—*Buy U. S. Government Bonds*—

Insurance at a Saving
Druggists' **Mutual Insurance** Company
OF IOWA, ALGONA, IOWA
Fire - Tornado - Automobile Insurance
Prompt Loss Service
MINNESOTA REPRESENTATIVE—S. E. STRUBLE, WYOMING, MINN.

Ulmer
PHARMACAL COMPANY
1400 Harmon Place
Minneapolis 3, Minnesota

Send for your copy of our new M-953a
Laboratory Stain and Reagent catalog

DANIELSON MEDICAL ARTS PHARMACY, INC.

10-14 Arcade, Medical Arts Building
825 Nicollet Avenue—Two Entrances—78 South Ninth Street
MINNEAPOLIS

PHONES:
ATLANTIC 3317
ATLANTIC 3318

HOURS:
WEEK DAYS—8 to 7
SUN. AND HOL.—10 TO 1

Index to Advertisers

Abbott Laboratories....902, 903
Aloe, A. S., Co.... 997
American Meat Institute.... 914
American National Bank.... 1004
Anderson, C. F., Co., Inc.... 1001
Ar-Ex Cosmetics.... 1005
Ayerst, McKenna & Harrison.... 906

Baker Laboratories, Inc.... 904
Bayer Co.... 908
Benson Optical Co.... 998
Birches Sanitarium.... 1000
Brown & Day, Inc.... 998
Buchstein-Medcalf Co..... 1003

Caswell-Ross Agency.... 898
Ciba Pharmaceutical Products, Inc....909, 989
Classified Advertising.... 1006
Continental Casualty Co.... 912
Cook County Graduate School of Medicine.... 988
Crestview Hospital.... 999

Dahl, Joseph E., Co.... 996
Danielson Medical Arts Pharmacy, Inc.... 1005
Druggists Mutual Insurance Co.... 1004

Ewald Bros....Inside Back Cover

Glenwood Hills Hospitals.... 1007

Hall, Anderson & Nordehn.... 1004
Hazelden Foundation.... 1002
Homewood Hospital 1000

Juran & Moody.... 995

Knox Gelatine.... 990

Lilly, Eli, & Co....Front Cover, 916
Lederle Laboratories....Facing page 912

Mead Johnson & Co.... 1008
Medical Protective Co.... 1002
Merck & Co., Inc.... 905
Milwaukee Sanitarium....Back Cover
Mounds Park Hospital....Back Cover

North Shore Health Resort.... 1003

Parke, Davis & Co....Inside Front Cover, 897
Patterson Surgical Supply Co.... 1006
Pfizer Laboratories.... 911
Physicians Casualty Association.... 993
Physicians & Hospitals Supply Co....910, 1003
Professional Credit Protective Bureau.... 913

Quincy X-Ray & Radium Laboratories.... 1004

Radium Rental Service.... 1002

St. Croixdale Sanitarium.... 900
Schering Corporation.... 915
Searle, G. D., & Co.... 987
Sheltering Arms 991

Ulmer Pharmacal Co.... 1005
Upjohn 901

Valleyview Hospital & Sanitarium.... 993

Whittaker Laboratories.... 996
Winthrop-Stearns, Inc.... 907

AR-EX
WAVE SET

In Vegetable Gum Sensitivity

When patients are sensitive to vegetable gums (karaya, tragacanth, etc.) you can safely suggest AR-EX Wave Set. Uses quince seed extract as the mucilaginous agent. Does not dry powder or flake off hair. Available either Scented or Unscented.
In 6 oz. bottles at pharmacies

AR-EX WAVE SET

AR-EX COSMETICS, INC. 1036 W. VAN BUREN ST., CHICAGO 7, ILL.

AR-EX
HYPO-ALLERGENIC
Cosmetics
CLINICALLY TESTED
FOR ALLERGIC PATIENTS

Classified Advertising

Replies to advertisements with key numbers should be mailed in care of Minnesota Medicine, *2642 University Avenue, Saint Paul 14, Minn.*

FOR RENT—Attractive doctor's suite in south Minneapolis. Wonderful location for a practice to be built up, or as an outlying office for a downtown doctor. Write Wm. L. Cochrane, 7301 Fremont Avenue South, Minneapolis 19, Minnesota. Telephone RO 9-8758.

WANTED—Locum tenens for one or more months. Address E-377, care Minnesota Medicine.

WANTED—Associate in general practice, prefer someone with surgical experience. Address E-378, care Minnesota Medicine.

FOR SALE—Active practice, home also available if desired, terms reasonable. Address E-379, care Minnesota Medicine.

UNUSUAL OPPORTUNITY FOR GENERAL PRACTITIONER to take over large practice established for twenty-five years in Saint Paul. Must retire because of poor health. Latest equipment optional, including completely furnished laboratory—shock proof x-ray, EKG, diathermy, basal metabolism, cauteries, et cetera. Will introduce. Address E-376, care Minnesota Medicine.

WANTED—Physician for settled and growing community in Saint Paul. New building ready for occupancy September first. Share reception room with dentist. Address E-384, care Minnesota Medicine.

RADIOLOGIST—Diplomate American Board in Radiology, thirty-one years old, Priority IV, Member ACR, desires association with hospital, individual or group. Address E-381, care Minnesota Medicine.

PLACEMENT SERVICE

The Minnesota State Medical Association maintains a Medical Placement Service for the benefit of physicians who are looking for locations and positions; also for communities, medical groups and physicians who are looking for licensed medical assistance. For information, write to the Minnesota State Medical Association, 496 Lowry Medical Arts Bldg., Saint Paul 2, Minnesota.

FOR RENT—Physician's office northeast corner building University Avenue and Dale Street. Inquire 490 North Dale Street, Saint Paul, Minnesota.

WANTED—Young associate in busy general practice conducted in office and hospital. New modern clinic building, all new equipment. Full staff privileges available in fully approved hospital. Opportunity for partnership. Beginning salary, $750 a month. Address E-375, care Minnesota Medicine.

GENERAL PRACTITIONER planning to retire wants someone to take over established practice, Lowry Medical Arts Building, Saint Paul. Will introduce. Address Box E-383, care Minnesota Medicine.

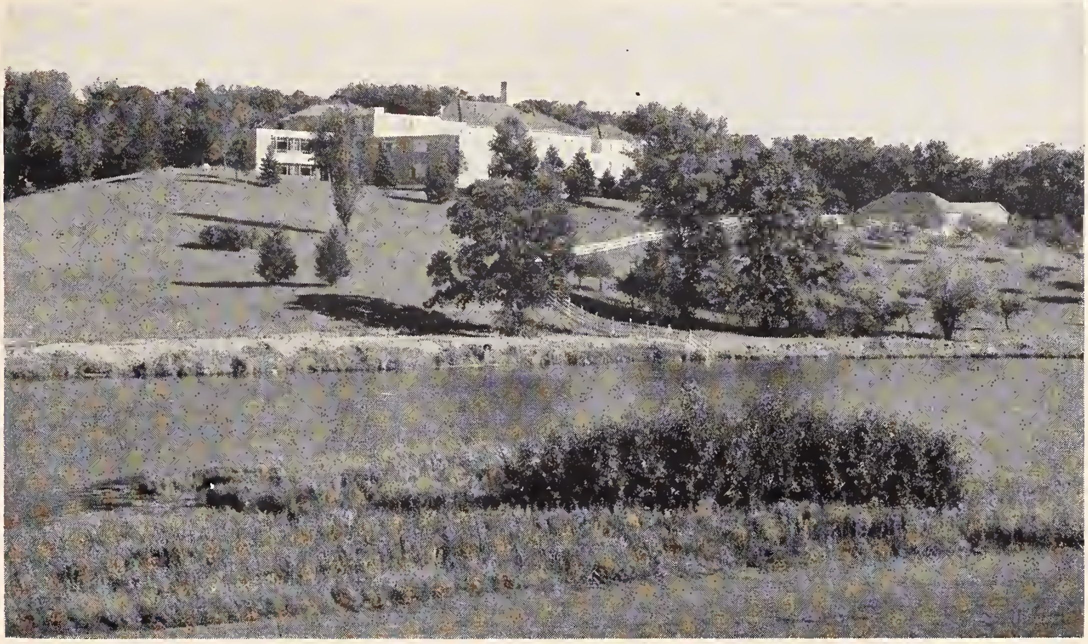
FOR SALE—100 M.A. Mattern Shockproof X-Ray table unit, rotating anode, one year old. Used 30 M.A. Bedside unit. Microtherm Diatherm new; gas machine. Address E-382, care Minnesota Medicine.

NORTHERN MINNESOTA—Minneapolis doctor's luxurious Rainy Lake home on market after 12 years' ownership. Located 7 miles east of International Falls in walleye country on 5-acre peninsula heavily wooded with virgin pine; ⅜ mile lakeshore. Surrounded on north and west by ring of 12 islands. Magnificent main lodge with complete bath; 3 guest cabins; all buildings lined with knotty pine, expensively furnished, A-1 shape. Artistically landscaped. Available by road. Suitable for resort. Worth twice the asking price. Cash or terms. Larry Sheehy, Realtor, International Falls, Minnesota.

PATTERSON SURGICAL SUPPLY COMPANY
130 W. Seventh Street, St. Paul 2, Minn.
HOSPITAL AND PHYSICIANS SUPPLIES AND EQUIPMENT
Cedar 1781-82-83

DOCTOR . . . *This is Your Hospital and Your School of Neuropsychiatric Nursing*

(By that we mean that not only have these institutions undertaken to constitute a haven of help for patients, but they form, in your interest a *remarkable facility for you professionally.)*



View of hospital, school, buildings and environs, 7 minutes from downtown Minneapolis

A COMPLETE NEURO-PSYCHIATRIC HOSPITAL

Up-to-date in all respects, new, functional buildings, set in spacious grounds, rehabilitation center, electroencephalography, therapies, laboratory. One of the largest neuro-psychiatric staffs in the United States. A voluntary, non-profit, non-sectarian institution of which this region may be proud.

SCHOOL FOR NEURO-PSYCHIATRIC NURSING

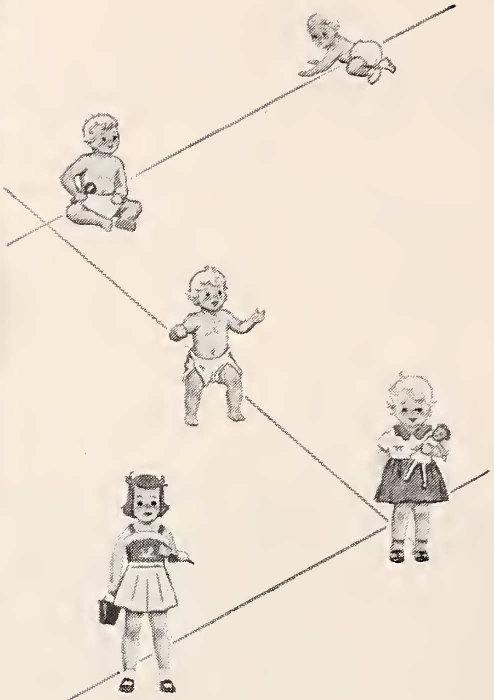
To offset the existing universal shortage of nurses, Glenwood Hills conducts a one-year course in neuro-psychiatric nursing. You have observed the skill and attitudes of our graduates and trainees. Recruit one or two in behalf of your profession as a "contribution" stipulating that we send them back to you when trained. We will. Meanwhile tuition, room and board are free.

Glenwood Hills Neuro-psychiatric Hospital
School of Neuro-psychiatric Nursing

3901 Golden Valley Road, Minneapolis 22, Minnesota JUniper 2771

Helen Swenson Rascop, Director of Nurses

50 cc.
Oleum
Percomorphum
WITH OTHER FISH LIVER OILS
AND VIOSTEROL
MEAD
MEAD JOHNSON & COMPANY
Evansville, Indiana, U.S.A.



adequate protection costs so little

No child need be denied protection against the threat of rickets and vitamin A and D deficiencies.

Mead's Oleum Percomorphum is a potent, dependable source of vitamins A and D . . . that can be administered at a cost of about a cent a day.

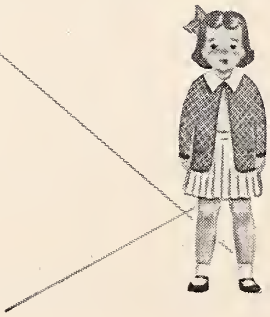
Specify MEAD'S OLEUM PERCOMORPHUM . . . the pioneer product with 18 years of successful clinical use.

Available in 10 cc. and economical 50 cc. bottles; also in bottles of 50 and 250 capsules.

MEAD

Mead's Oleum Percomorphum

MEAD JOHNSON & COMPANY • EVANSVILLE 21, IND., U.S.A.



ENTURY LATER—STILL UNEXCELLED

Pitocin®

oxytocic of choice

The isolation of PITOCIN by Parke, Davis & Company in 1927 and its introduction to the medical profession in 1928, marked a new era in hormone therapy. To the obstetrician this was an epochal event; he could now secure the desired uterine effect without the elevation of blood pressure caused by unfractionated posterior pituitary extracts.

Today, PITOCIN is still the oxytocic of choice, widely used in treatment for primary and for secondary uterine inertia, for postpartum hemorrhage due to uterine atony, for the third stage of labor, for induction of labor, and during cesarean section to facilitate suturing the uterine wall.

PITOCIN (oxytocin injection, Parke-Davis) is supplied in 0.5-cc. (5-unit) ampoules, and in 1-cc. (10-unit) ampoules, in boxes of 6, 25, and 100. Each cc. contains 10 international oxytocic units (U.S.P. units).

MEDICAMENTA · VERA · PD & CO.

Parke, Davis & Company
DETROIT, MICHIGAN

Looking Toward New Horizons

The day of adventure and experimentation is by no means past. But current accomplishments are often overlooked in the zeal to scan the horizon for something better. It's sage advice that suggests that we take advantage of and nail down the present maximum accomplishments. It is also sage advice that suggests that you turn to your Society's investigated and tested plan of Accident and Sickness Insurance. The horizon holds no greater value.

Income protection should have priority over all other forms of insurance, for you are not able to maintain anything that you own nor reach that Utopia without income. Please call us today.

CASWELL-ROSS AGENCY

1177 N. W. Bank Building
Minneapolis 2, Minnesota
Minneapolis—MA 2585
St. Paul—PR 7004

Insurors to:

Minnesota State Bar Association
Minnesota State Dental Association
Minnesota State Medical Association
Minnesota Society of C. P. A.
Minnesota State Pharmaceutical Assn.
Minnesota Auto Dealers Association
Minnesota Federation of Eng. Societies
Minnesota State Veterinary Medical Soc.
Hennepin County Medical Society
Hennepin County Bar Association
11th Judicial Bar Association
Minneapolis Association of Life Underwriters
Ramsey County Medical Society
Ramsey County Bar Association
St. Paul District Dental Soc.
Minneapolis District Dental Soc.
St. Cloud Dental and Stearns County Medical Society
Duluth District Dental Society
East Central Medical Society
St. Louis County Medical Society
West Central Dist. Dental Society
Northwest Proprietors Association
St. Paul Life Underwriters, Inc.

Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 36 **October, 1953** **Number 10**

Contents

THE PHYSICIAN AND HIS ESTATE.
Harry A. Blackmun, LL.B., Rochester, Minnesota. 1033

THE DOCTER AS A MEDICAL WITNESS.
Raymond Scallen, Minneapolis, Minnesota........1036

A COUNTRY NEWSPAPERMAN WANTS MORE "HORSE AND BUGGY" DOCTORS.
Alan C. McIntosh, Luverne, Minnesota..........1039

THE PROBLEM OF LUPUS ERYTHEMATOSUS.
Henry E. Michelson, M.D., Minneapolis, Minnesota 1043

RED SORE EYE EMERGENCY CARE.
Malcolm A. McCannel, M.D., Minneapolis, Minnesota 1046

QUINIDINE INTOXICATION OCCURRING DURING THERAPY OF AURICULAR ARRHYTHMIAS.
Reuben Berman, M.D., Charles M. Sadoff, M.D., and *George B. Gordon, M.D.,* Minneapolis, Minnesota 1052

THE MEDICAL TECHNOLOGIST AND THE UNIVERSITY OF MINNESOTA.
Wesley W. Spink, M.D., Minneapolis, Minnesota..1061

LABORATORY AIDS TO MEDICAL PRACTICE:

Practical Considerations in Cervical Cytology.
David C. Dahlin, M.D., Rochester, Minnesota....1065

CASE REPORT:

Cesarian Section Complicated by Cholethiasis.
Howard A. Vogel, M.D., New Ulm, Minnesota...1067

HISTORY OF MEDICINE IN MINNESOTA:

Medical History of the County of Yellow Medicine. *(Continued)*
Mildred B. Lee, Granite Falls, Minnesota......1068

PRESIDENT'S LETTER:

The Age of Retirement........................1076

EDITORIAL:

The Clinician vs. the Specialist..................1077

Vice Versa....................................1078

Nalline® and Tensilon®........................1078

THE DEAN'S PAGE:

Child Psychiatry..............................1080

MEDICAL ECONOMICS:

CIO Urges Members to Action for Health.......1081

New Proposals Sent to Health Insurance Plan...1081

Magazine Urges Review of Voluntary Insurance. 1082

Basic Science Research Gets Fund Grant.........1083

President Recommends Social Security Increase..1083

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS..1083

REPORTS AND ANNOUNCEMENTS...................1084

WOMAN'S AUXILIARY............................1089

IN MEMORIAM...................................1090

OF GENERAL INTEREST...........................1092

BOOK REVIEWS..................................1101

Contents of MINNESOTA MEDICINE copyrighted by Minnesota State Medical Association, 1953

Entered at the Post Office in Saint Paul as second class mail matter. Accepted for mailing at the special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 13, 1918.

MINNESOTA MEDICINE

OFFICIAL JOURNAL OF THE MINNESOTA STATE MEDICAL ASSOCIATION
Published by the Association under the direction of its Editing and Publishing Committee

Office of Minnesota State Medical Association,
496 Lowry Medical Arts Bldg., Saint Paul 2, Minnesota.

EDITING AND PUBLISHING COMMITTEE

E. M. HAMMES, Saint Paul	T. A. PEPPARD, Minneapolis
PHILIP F. DONOHUE, Saint Paul	H. A. ROUST, Montevideo
L. M. EATON, Rochester	O. W. ROWE, Duluth
J. J. HEIMARK, Monterey	HENRY L. ULRICH, Minneapolis
C. L. OPPEGAARD, Crookston	A. H. WELLS, Duluth

EDITORIAL STAFF
ARTHUR H. WELLS, Duluth, Editor
GEORGE EARL, Saint Paul, Associate Editor
HENRY L. ULRICH, Minneapolis, Associate Editor

BUSINESS MANAGER
R. R. ROSELL

Annual Subscription—$3.00. Single Copies—$0.40. Foreign and Canadian Subscriptions—$3.50

The right is reserved to reject material submitted for editorial or advertising columns. The Editing and Publishing Committee does not hold itself responsible for views expressed either in editorials or other articles when signed by the author.

Classified advertising—ten cents a word; minimum charge, $2.00; key number, 25c additional. Remittance should accompany order.

Display advertising rates on request.

Address all communications concerning the journal to Minnesota Medicine, 2642 University Avenue, Saint Paul 14, Minnesota. Telephone Nestor 2641.

A MODERN PRIVATE SANITARIUM

for the Diagnosis, Care and Treatment of Nervous and Mental Disorders

MAIN BUILDING—One of 10 Units in "Cottage Plan"

ST. CROIXDALE ON LAKE ST. CROIX

PRESCOTT, WISCONSIN

Located on beautiful Lake St. Croix, 18 miles from the Twin Cities, it has the advantages of both City and Country. Every facility for treatment provided, including recreational activities and occupational-therapy under trained personnel. Close personal supervision given patients, and modern methods of therapy employed. Inspection and cooperation by reputable physicians invited. Rates very reasonable. Illustrated folder on request.

Prescott Office
Prescott, Wisconsin
Howard J. Laney, M.D.
Tel. 39 and Res., 76

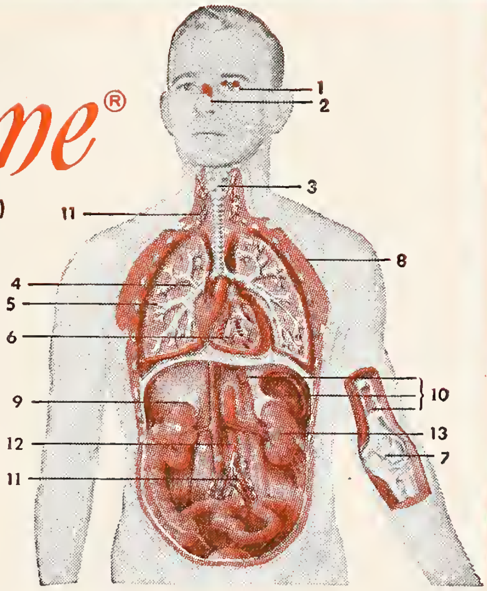
Consulting Neuro-Psychiatrists
Hewitt B. Hannah, M.D., Andrew J. Leemhuis, M.D.
527 Medical Arts Bldg., Tel. MAin 1357, Minneapolis, Minn.

Superintendent
Ella M. Leseman
Prescott, Wisconsin
Tel. 69

HydroCortone®

(HYDROCORTISONE, MERCK)

offers definite therapeutic advantages



1

HYDROCORTONE is a natural and principal anti-inflammatory adrenocortical steroid.

2

HYDROCORTONE Tablets produce the same therapeutic results as cortisone, and *in smaller dosage.*

3

HYDROCORTONE Tablets generally may be administered in a dosage two-thirds that of cortisone.

4

HYDROCORTONE Tablets recently were drastically reduced in price. Cost of therapy now is substantially the same as with cortisone.

Literature on request

Primary Sites of Pathology and Indications

1. EYE—Inflammatory eye disease. **2. NOSE**—Intractable hay fever. **3. LARYNX**—Laryngeal edema (allergic). **4. BRONCHI**—Intractable bronchial asthma. **5. LUNG**—Sarcoidosis. **6. HEART**—Acute rheumatic fever with carditis. **7. BONES, JOINTS, AND BURSAE**—Osteoarthritis; Rheumatoid arthritis; Rheumatoid spondylitis; Acute gouty arthritis; Still's disease; Psoriatic arthritis; Bursitis. **8. SKIN AND CONNECTIVE TISSUE**—Pemphigus; Disseminated lupus erythematosus; Scleroderma (early); Dermatomyositis; Atopic dermatitis; Exfoliative dermatitis; Dermatitis venenata (*e.g.*, poison ivy); Dermatitis medicamentosa. **9. ADRENAL GLAND**—Congenital adrenal hyperplasia; Addison's disease; Following adrenalectomy for hypertension, Cushing's syndrome, and neoplastic diseases. **10. BLOOD, BONE, AND MARROW**—Allergic purpura; Acute leukemia* (lymphocytic or granulocytic); Chronic lymphatic leukemia.* **11. LYMPH NODES**—Lymphosarcoma;* Hodgkin's disease.* **12. ARTERIES AND CONNECTIVE TISSUE**—Periarteritis nodosa (early). **13. KIDNEY**—Nephrotic syndrome, without uremia (to induce withdrawal diuresis). **14. VARIOUS TISSUES**—Angioneurotic edema; Serum sickness; Sarcoidosis; Drug sensitization; Waterhouse-Friderichsen syndrome.

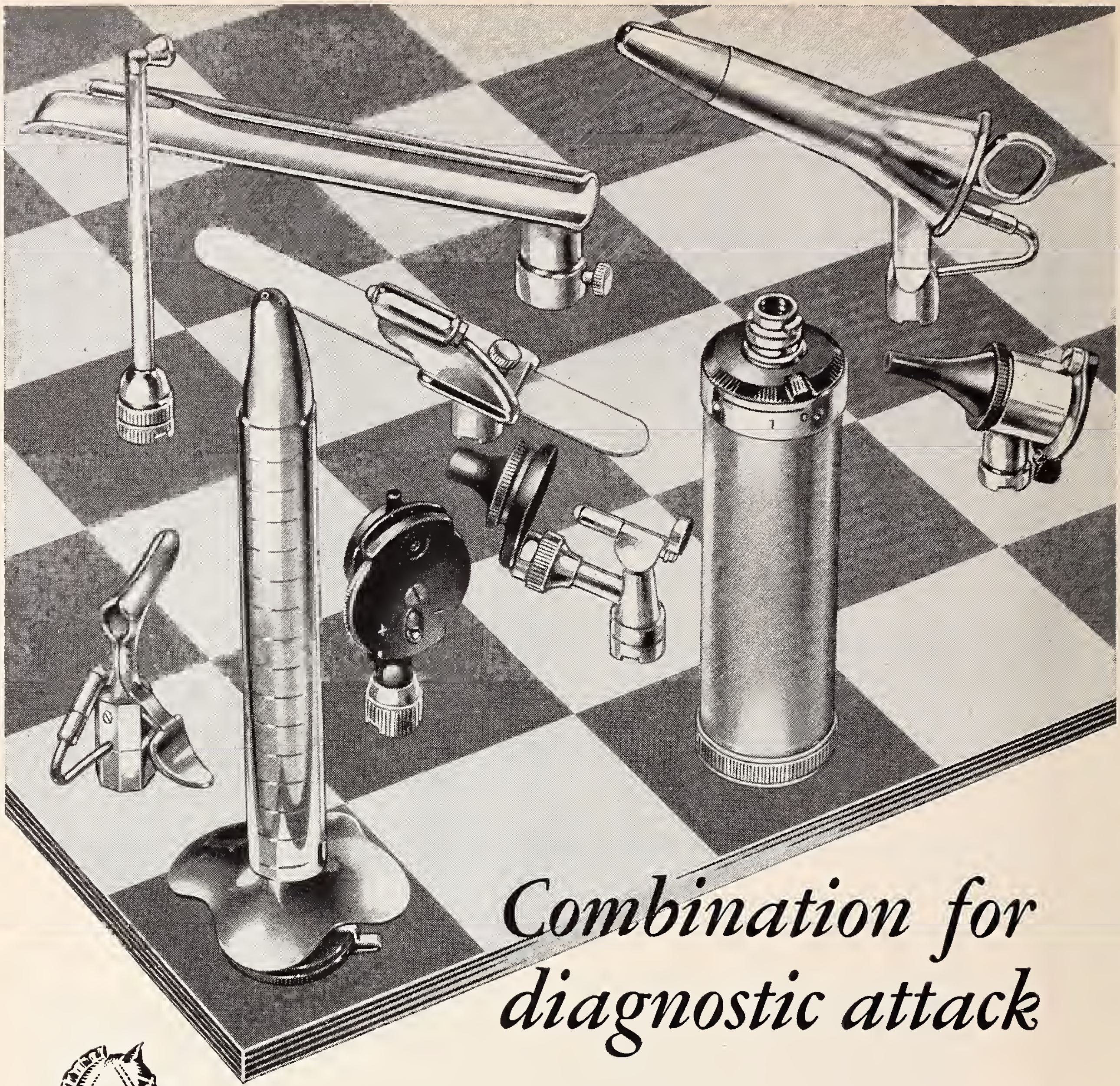
---

*Transient beneficial effects.

HYDROCORTONE *is the registered trade-mark of Merck & Co., Inc. for its brand of hydrocortisone.*

MERCK & CO., INC.
Manufacturing Chemists
RAHWAY, NEW JERSEY

© Merck & Co., Inc.



Combination for diagnostic attack

A single chess piece can be a beautiful thing, but its ultimate efficiency comes only when it is arrayed with others in a combination. Just so with diagnostic instruments. Maximum accuracy, thoroughness and speed of diagnosis are attained with instruments, each having its own function, but designed to work together as a team.

All the Welch Allyn illuminated instruments shown above, for example, are superbly designed for their particular job, yet all are instantly interchangeable on a single battery handle. This feature alone can save many minutes of the physician's time each day and reduces instrument investment by obviating the need to purchase a different handle for each instrument.

We will be glad to send you a complete Welch Allyn catalog or to demonstrate any Welch Allyn diagnostic instrument which interests you.

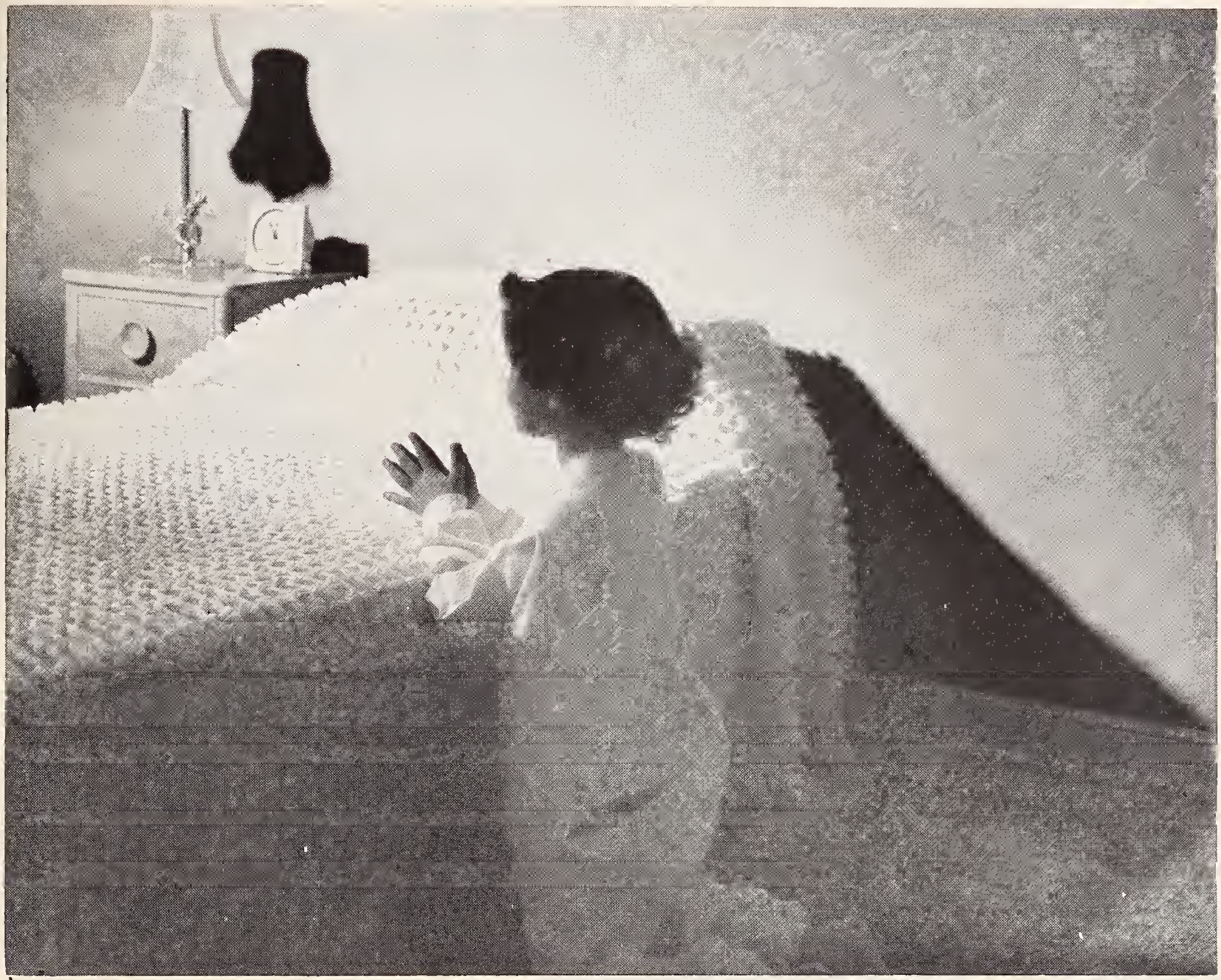
PHYSICIANS AND HOSPITALS SUPPLY CO., Inc.
1400 Harmon Place **Minneapolis, Minnesota**

Please send your latest Welch Allyn Diagnostic Instrument Catalogue, M-1053.

NAME____________________

ADDRESS____________________

CITY____________________STATE____________



". . . and please get people to pay what they owe Daddy. Mommy says that's why he's so cross."

Are you burdened by a heap of uncollected accounts? The Professional Credit Protective Bureau can really help you.

The Professional Credit Protective Bureau is collecting thousands of past due accounts in the professional field.

The Professional Credit Protective Bureau is a credit control organization that sees that the patient pays direct to the supplier of services. In other words you PAY THE COLLECTION ORGANIZATION AFTER YOUR PATIENT HAS PAID YOU and neither you nor the debtor is embarrassed.

Ninety-two leading trade associations . . . including many medical and dental organizations . . . are recommending this credit control system as part of their service to members.

It will pay you to investigate this tried and true system. Use the attached coupon.

Professional Credit Protective Bureau
724 Metropolitan Bldg., Dept. MM 10-53
Minneapolis 1, Minn.
Please send me full details on the operation of your collection service.

Name ....

Address ....

City .... State ....

Division of

The I.C. System

724 Metropolitan Bldg.
Minneapolis 1, Minn.

A Wise Choice Against Resistant Cocc

ERYTHROCIN

a selective antibiotic

A DRUG OF CHOICE

gainst the majority of coccic infections—especially when atients are sensitive to other antibiotics or the cocci are esistant.

ADVANTAGEOUS

because the special acid-resistant coating, developed by Abbott, and Abbott's built-in disintegrator, assure rapid dispersal and absorption in the upper intestinal tract.

DRUG OF CHOICE

gainst staphylococci—because of the high incidence of taphylococcic resistance to other antibiotics.

A DRUG OF CHOICE

because it is less likely to alter normal intestinal flora than other oral antibiotics, except penicillin; gastrointestinal disturbances are rare; no serious side effects reported.

Prescribe ERYTHROCIN

in pharyngitis, tonsillitis, otitis media, sinusitis, bronchitis, pneumonia, scarlet fever, erysipelas, pyoderma, certain cases of osteomyelitis, and other indicated conditions.

Abbott

* *Trade Mark for*

ERYTHROMYCIN, ABBOTT
CRYSTALLINE

NOTES: TREATMENT OF ANAL PRURITUS

New! SOOTHING, READY-TO-USE PADS REPLACE HARSH TOILET TISSUE

What are they?

Tucks are pure, soft outing flannel pads moistened and mildly medicated with a special solution containing witch hazel and glycerin.

Gentle, thorough

Being moist, Tucks clean the pruritic area completely, removing all vestiges of contaminating fecal material. Being soft, they cannot irritate sensitive anal tissue and cause further aggravation.

Majority improve

Numerous clinical reports indicate that a majority of cases of anal pruritus will show appreciable improvements when Tucks are prescribed to replace toilet tissue. Tucks have been recommended further as a prophylactic measure against all forms of anorectal disease which may be caused or aggravated by improper anal hygiene. We suggest you try Tucks for your next case of anal pruritus.

How supplied

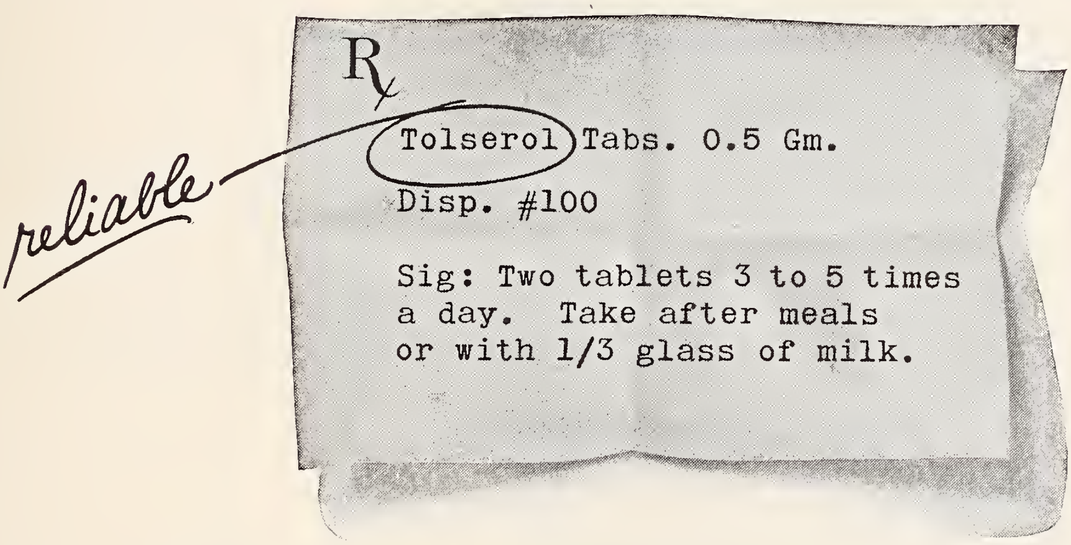
Tucks are provided in jars of 100. A supply for trial will be sent you upon written request. Address Dept. M-3, Fuller Pharmaceutical Co., 715 So. 10th St., Minneapolis 4, Minn.

Tucks

Mildly medicated cleansing cloths
Benadex • Benzocones • Hydrocil
Hydrocil Fortified • products of

fuller
PHARMACEUTICAL COMPANY

RAPID ABSORPTION—*MAXIMUM THERAPEUTIC EFFECT*



R

Tolserol Tabs. 0.5 Gm.

Disp. #100

Sig: Two tablets 3 to 5 times
a day. Take after meals
or with 1/3 glass of milk.

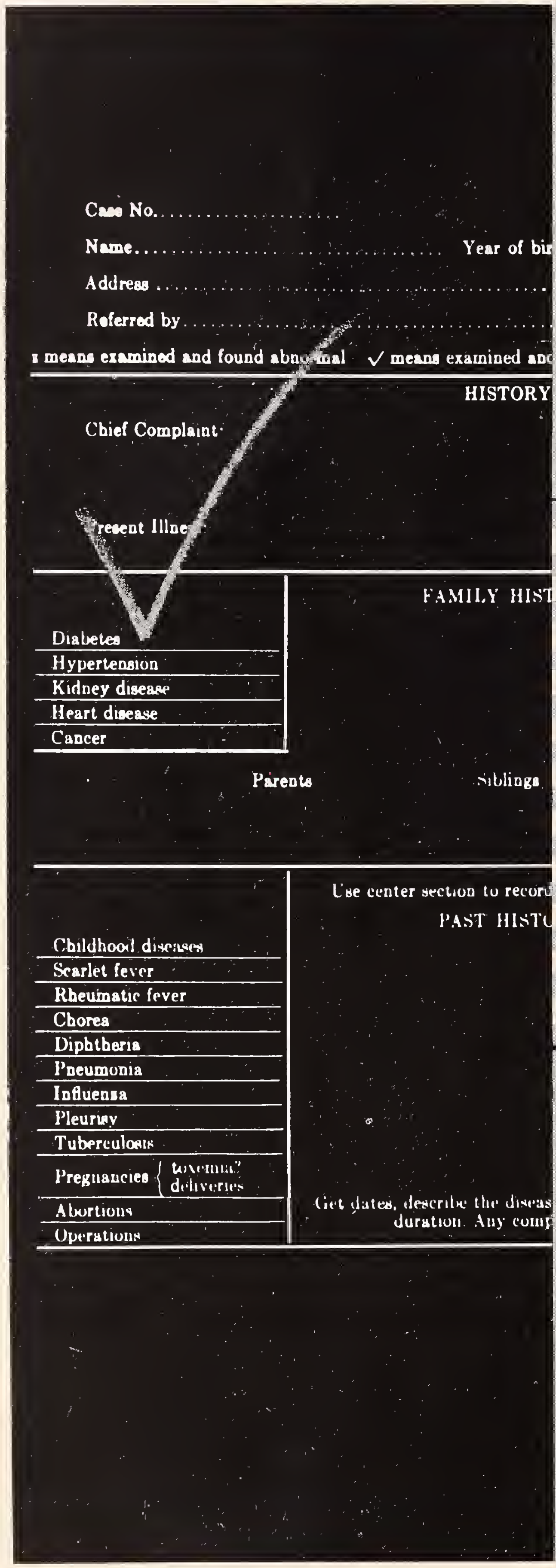
The clinical effectiveness of different brands of mephenesin tablets depends on their rate of absorption. A mephenesin tablet that disintegrates slowly is absorbed slowly. The resulting low blood levels may never produce a maximum therapeutic effect. Results with such a tablet are usually poor.

Tolserol Tablets are a result of extensive study and are formulated to disintegrate rapidly for fast absorption, thus maintaining optimum blood levels.

Tolserol
(Squibb Mephenesin)

Complete information on the use of Tolserol in muscle spasm of rheumatic disorders, in neurologic disorders and in acute alcoholism is available from the Professional Service Department, Squibb, 745 Fifth Avenue, New York 22, N. Y.

SQUIBB



Case No. ....

Name.. Year of bi

Address ....

Referred by ....

means examined and found abnormal ✓ means examined anc

HISTORY

Chief Complaint

Present Illne

FAMILY HIST

Diabetes

Hypertension

Kidney disease

Heart disease

Cancer

Parents

Siblings

Use center section to recor

PAST HISTO

Childhood diseases

Scarlet fever

Rheumatic fever

Chorea

Diphtheria

Pneumonia

Influenza

Pleurisy

Tuberculosis

Pregnancies { toxemia? deliveries

Abortions

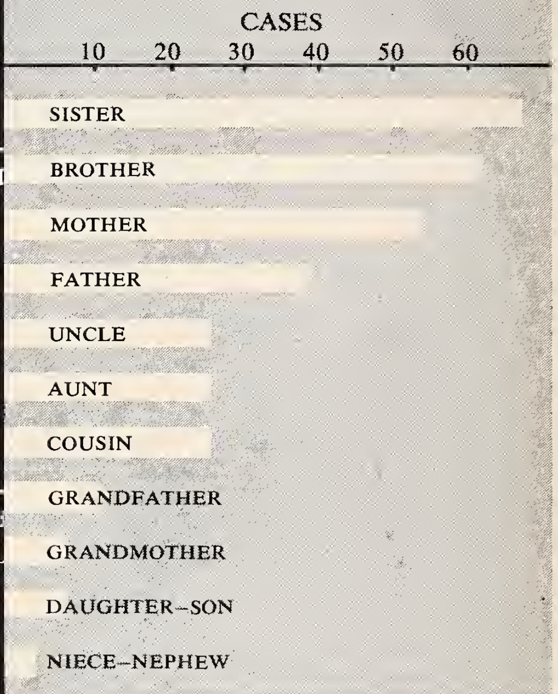
Operations

Get dates, describe the diseas duration. Any comp

when the history hints at diabetes

CLINITEST®
BRAND

for urine-sugar analysis



The Diabetic Relatives of 265 Diabetics[1]

In view of "...the very high incidence of...unsuspected cases among the blood relatives of diabetic patients,"[2] urine-sugar testing of all such individuals should be routine and frequent.

1. Barach, J. H.: Diabetes and Its Treatment, New York, Oxford University Press, 1949, p. 38.
2. Allen, F. M.: Diabetes Mellitus, in Piersol. G. M., and Bortz, E. L.: Cyclopedia of Medicine, Surgery, Specialties, Philadelphia, F. A. Davis Company, 1951, vol. 4, p. 505.

AMES
COMPANY, INC., ELKHART, INDIANA
Ames Company of Canada, Ltd., Toronto

46453

Cortisone + SCHERING = Cortogen

he symbol SCHERING denotes leadership in
teroid hormone research and
anufacture -- including Cortogen
n the most useful clinical forms.
or systemic therapy, use Cortogen
ablets SCHERING or injection
-or eye disorders use Cortogen
phthalmic suspension --
terile. The Schering seal SCHERING
ppears on each tablet and package
- your assurance of quality.

CORTOGEN®

Acetate (cortisone acetate, Schering) Tablets, 5 mg. and 25 mg.;
Injection, 25 mg. per cc., 10 cc. multiple-dose vials;
Ophthalmic Suspension—*Sterile*, 0.5% and 2.5%, 5 cc. dropper bottles.

Schering CORPORATION · BLOOMFIELD, NEW JERSEY
In Canada: Schering Corporation, Ltd., Montreal.

CORTOGEN

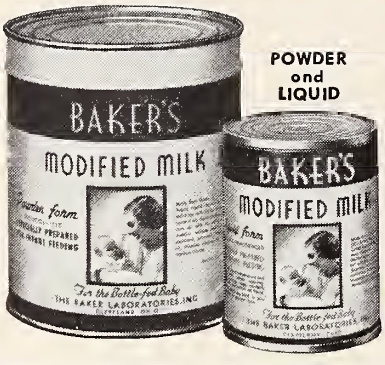
SCHERING

50 YEARS AGO

"... in a word, deficiency of fat in the food is one of the chief factors in the production of rickets." (1)

TODAY...

We know that lack of fat-soluble vitamin D in the diet is one of the major causes of rickets. Other deficiency diseases are also caused by a lack of adequate vitamins in the diet.



POWDER and LIQUID

Made from Grade A Milk, (U. S. Public Health Service Milk Code) modified by replacement of the milk fat with animal and vegetable oils and by the addition of carbohydrates, vitamins and iron.

VITAMIN CONTENT PER QUART OF NORMAL DILUTION:

Vitamin A	2500 U.S.P. Units	Thiamine	0.6 milligrams
Vitamin D	800 U.S.P. Units	Niacin	5.0 milligrams
Vitamin C	None	Riboflavin	1.0 milligrams

A source of vitamin C should be prescribed by the physician.

BAKER'S MODIFIED MILK IS FORTIFIED BY *Synthetic* VITAMINS TO PROVIDE ADEQUATE AMOUNTS OF ALL RECOMMENDED VITAMINS (except C)

(1) Cheadle—*Artificial Feeding and Food Disorders of Infants*. Sixth Edition (1906)

BAKER'S MODIFIED MILK

THE BAKER LABORATORIES INC.

Main Office: Cleveland 3, Ohio
Plant: East Troy, Wisconsin

Division Offices: Atlanta, Dallas, Denver, Greensboro, N. C., Los Angeles, San Francisco, Seattle

ACCEPTED
COUNCIL ON FOODS AND NUTRITION
AMERICAN MEDICAL ASSOCIATION

They'd crowd an outdoor cafe...

all the patients who represent
the 44 uses for short-acting NEMBUTAL®

44 PATIENTS? Just look in the picture above. You'll find them all. And with every NEMBUTAL patient, with every NEMBUTAL use, these are the facts that you'll find the same:

1. *Short-acting* NEMBUTAL (*Pentobarbital, Abbott*) *can produce any desired degree of cerebral depression—from mild sedation to deep hypnosis.*
2. *The dosage required is small—only about one-half that of many other barbiturates.*
3. *There's less drug to be inactivated, shorter duration of effect, wide margin of safety and little tendency toward morning-after hangover.*
4. *In equal oral doses, no other barbiturate combines quicker, briefer, more profound effect.*

All are sound enough reasons for your prescription to call for short-acting NEMBUTAL. How many uses have *you* tried? Abbott

For brief and profound hypnosis Try the 0.1-Gm. (1½-gr.) NEMBUTAL Sodium Capsule

1-212A

Here's the *most comprehensive*
x-ray supply catalog
ever published!

1953 - 1954
146 pages
1205 listings
92 new products
X-RAY
SUPPLIES
AND
ACCESSORIES
GENERAL ELECTRIC

No x-ray department can afford to be without General Electric's new x-ray supply catalog. Every supply and accessory item you need is covered in an easy, straight-forward manner that simplifies ordering.

And here are two unique conveniences: Prices are printed alongside every listing — there's no need to bother with a separate price list. Bound-in postpaid order cards also save time — and postage.

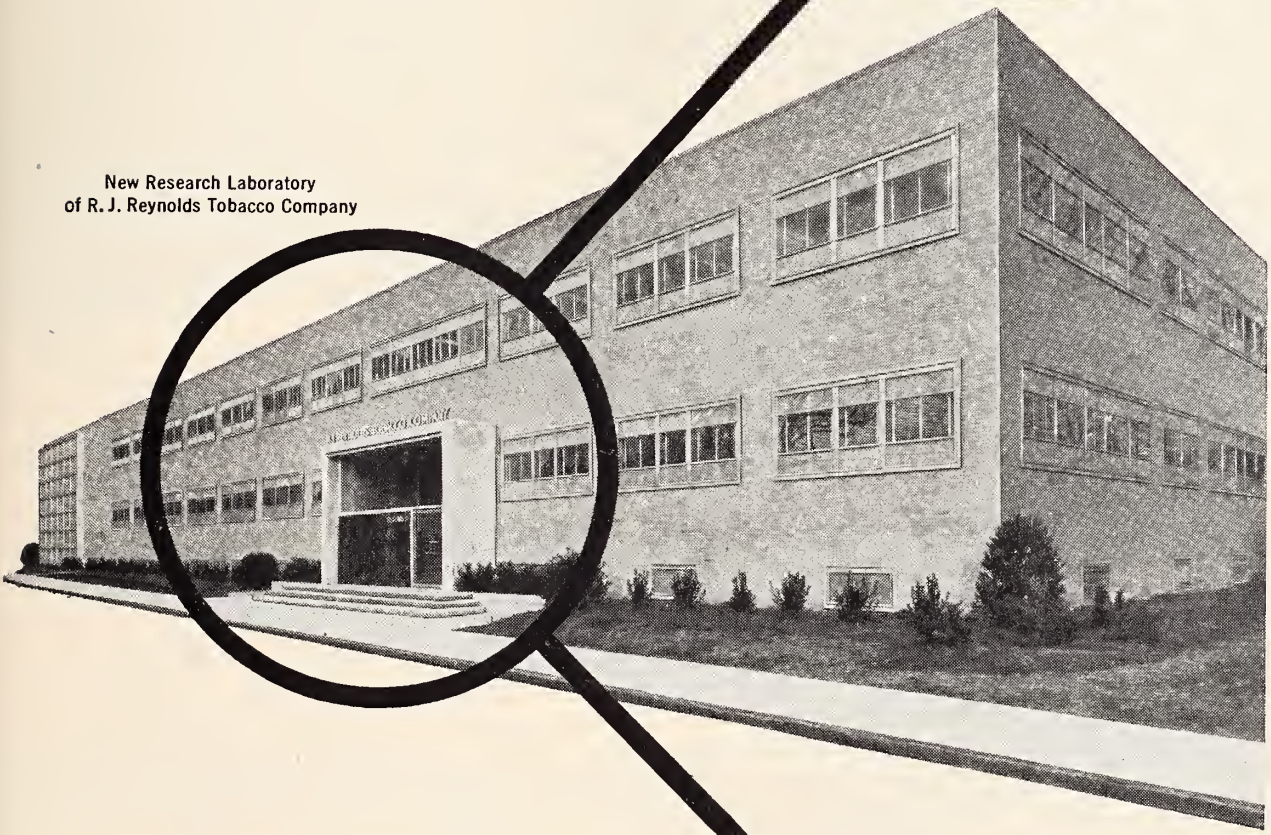
Ask your G-E x-ray representative for this handy reference guide to your entire x-ray supply needs.

GENERAL ELECTRIC

Direct Factory Branches:
MINNEAPOLIS — 808 Nicollet Avenue
DULUTH — 928 East 2nd Street

Resident Representatives:
MANKATO — J. F. Van Osdell, 123 Blue Earth
ST. PAUL — R. H. Holen, 153 W. Robie
SIOUX FALLS — H. L. Norlin, 1908 S. Sixth Avenue

PROGRESS THROUGH RESEARCH



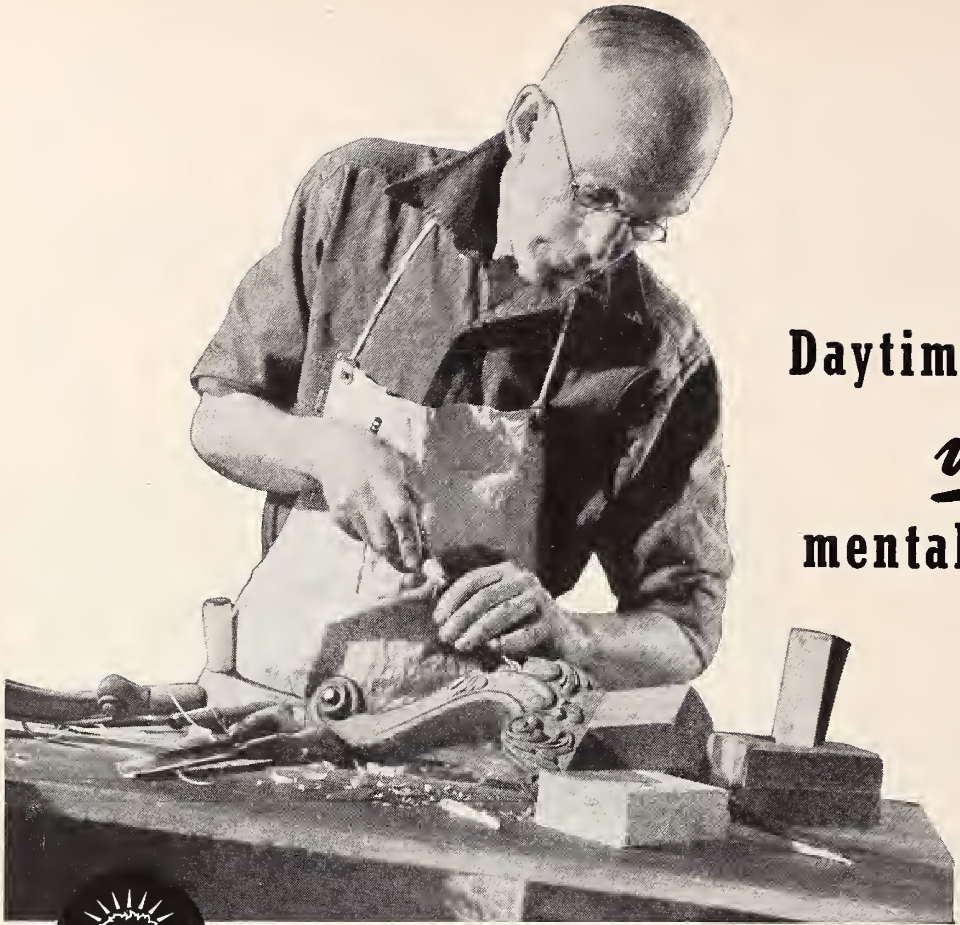
New Research Laboratory
of R. J. Reynolds Tobacco Company

The makers of Camels never cease their efforts to maintain and to improve the standards of quality that distinguish America's most popular cigarette.

The plant shown above, which was opened this year, is a $2,000,000 addition to Camel's research facilities.

CAMEL
TURKISH & DOMESTIC
BLEND
CIGARETTES

R. J. REYNOLDS TOBACCO COMPANY • WINSTON-SALEM • N. C.



Daytime sedation

with

mental alertness

WINTHROP

MEBARAL®

BRAND OF MEPHOBARBITAL

—in depressed and agitated states

psychoneurosis
hypertension
hyperthyroidism
convulsive disorders
difficult menopause
hyperhidrosis

Neurotic depression hiding beneath the disguise of multiple physical complaints is an everyday problem in medical practice.

For effective sedation in these cases, and as a means of restoring harmonious relations between patient and environment, Mebaral has been found especially suitable because it lacks excessive hypnotic action.

ACCEPTED
COUNCIL ON PHARMACY AND CHEMISTRY
AMERICAN MEDICAL ASSOCIATION

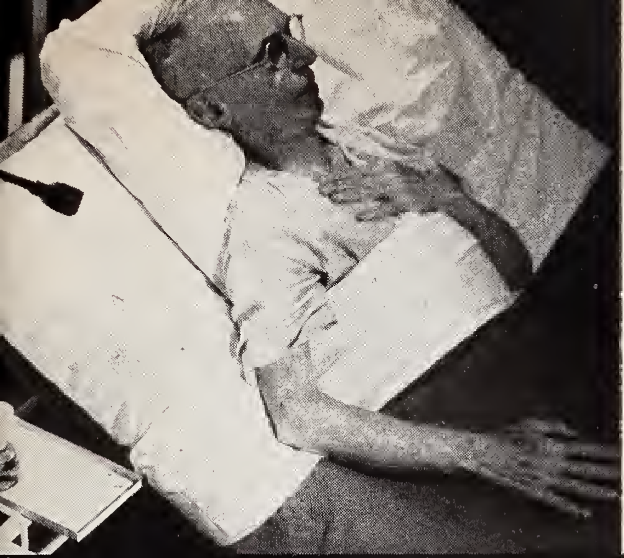
DOSAGE:
Adults—32 mg. to 0.1 Gm. (optimal 50 mg.), 3 or 4 times daily.

Children—16 to 32 mg., 3 or 4 times daily.

SUPPLIED:
Tablets of 32 mg. (½ grain)
50 mg. (¾ grain)
0.1 Gm. (1½ grains)
0.2 Gm. (3 grains) scored

Mebaral, trademark reg. U.S. & Canada

WINTHROP-STEARNS INC. New York 18, N.Y. • Windsor, Ont.



Terramycin®

BRAND OF OXYTETRACYCLINE

an agent of choice in urinary tract infections

- *promptly effective against a broad-spectrum of urinary pathogens*
- *high concentration in active form in urinary tract*
- *well tolerated, even upon prolonged administration*

Terramycin
is acclaimed
by urologists everywhere
for unsurpassed action in

chronic urinary tract infections

acute urinary tract infections

urinary tract surgery

"The resistant cases showed remarkable response."[1]
". . . has cured where all other antibiotics have failed."[2]

"Patients with pyelitis were well and doing their usual duties within 24 hours . . ."[3]

"Morbidity from apparent genito-urinary causes was noted in only one patient of 44 patients who received prophylactic Terramycin."[3]

"Terramycin is generally well tolerated, the percentage of relapses being low and the percentage of bacteriological as well as clinical cures high."[2]

1. Ferguson, C., and Miller, C. D.: J. Urol. *67*:762 (May) 1952.
2. Trafton, H. M., and Lind, H. E.: Ibid. *69*:315 (Feb.) 1953.
3. Blahey, P. R.: Canad. M. A. J. *66*:151 (Feb.) 1952.

Pfizer

PFIZER LABORATORIES BROOKLYN 6, N. Y.
DIVISION, CHAS. PFIZER & CO., INC.

ACCEPTED COUNCIL ON PHARMACY AND CHEMISTRY AMERICAN MEDICAL ASSOCIATION

"PREMARIN"

..."sense of well-being"...

In addition to relief of menopausal symptoms, "a feeling of well-being or tonic effect" was frequently reported by patients on "Premarin" therapy.*

"PREMARIN®" *in the menopause*

Estrogenic Substances (water-soluble) also known as Conjugated Estrogens (equine). Tablets and liquid.

*Harding, F. E.: West. J. Surg. 52:31 (Jan.) 1944.

"PREMARIN"

5311

Ayerst®

AYERST, McKENNA & HARRISON LIMITED • *New York, N. Y.* • *Montreal, Canada*

Upjohn

absorbable
hemostat:

Available in a large variety of sizes and forms, including:

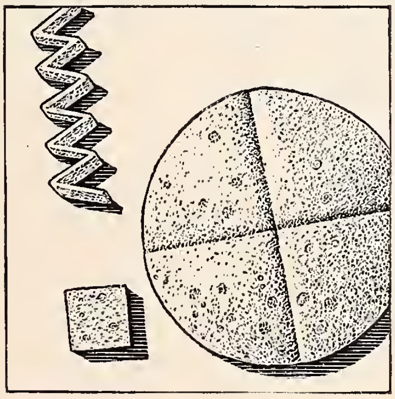
Surgical sponges
Compressed surgical sponges
Dental packs
Gynecologic packs
Nasal packs
Prostatectomy cones
Tumor diagnosis kit

The Upjohn Company, Kalamazoo, Michigan

Gelfoam

ACCEPTED COUNCIL ON PHARMACY AND CHEMISTRY AMERICAN MEDICAL ASSOCIATION

Trademark Reg. U.S. Pat. Off. BRAND OF ABSORBABLE GELATIN SPONGE



Crestview Hospital
SAINT PAUL

A non-profit organization

Occupational therapy department.

CRESTVIEW
NEUROPSYCHIATRIC
HOSPITAL
145 W. College Ave. . . . GArfield 5841
SAINT PAUL, MINNESOTA
Highest standard of service and facilities for over 15 years.

The only non-profit specialized hospital in St. Paul devoted exclusively to the treatment and care of neuropsychiatric patients.

Ultra modern facilities and comforts at the lowest cost to patients.

- Occupational therapy and recreational department.
- Complete X-ray- and- laboratory.
- Electrocardiography — basal metabolism.
- Electroencephalography available.
- All patients rooms air-conditioned.
- Background music and psychotherapy sound equipment.
- Medically staffed by every neurologist and psychiatrist in St. Paul.
- Especially trained nursing staff.

MEMBER of the American Hospital Association

MEMBER of the Minnesota Hospital Association

APPROVED by the Minnesota State Medical Association and the Ramsey County Medical Society.

Send for photo brochure and rate schedule.

USE

Q-Test

The One Hour Pregnancy Diagnosis

BROWN & DAY, INC.

St. Paul 1, Minn.

New Horizons in Antibiotic Therapy

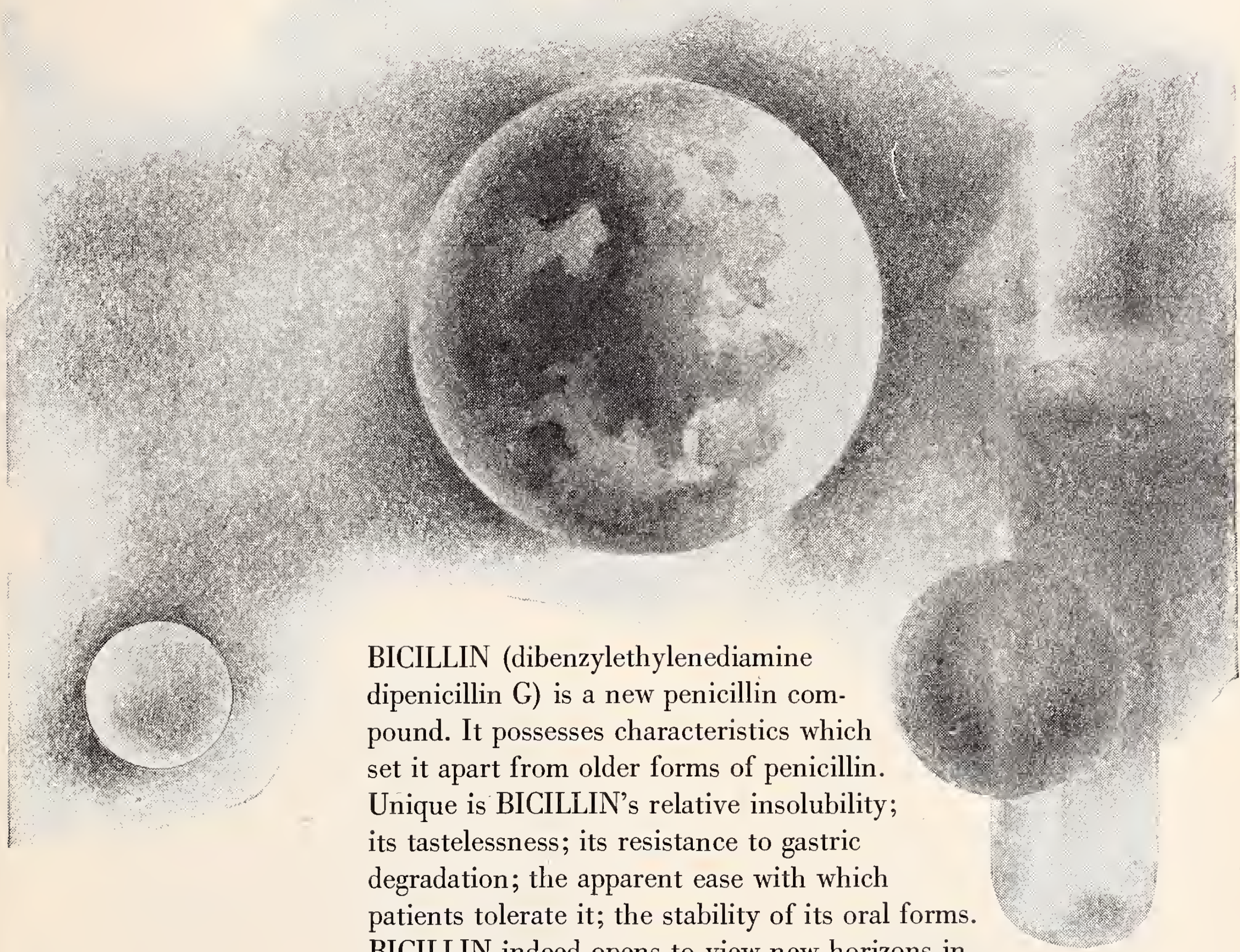
BICILLIN®

Dibenzylethylenediamine Dipenicillin G

A NEW FORM OF PENICILLIN

***NOW*... Council Accepted**

ACCEPTED COUNCIL ON PHARMACY AND CHEMISTRY AMERICAN MEDICAL ASSOCIATION



BICILLIN (dibenzylethylenediamine dipenicillin G) is a new penicillin compound. It possesses characteristics which set it apart from older forms of penicillin. Unique is BICILLIN's relative insolubility; its tastelessness; its resistance to gastric degradation; the apparent ease with which patients tolerate it; the stability of its oral forms. BICILLIN indeed opens to view new horizons in antibiotic therapy . . . new applications of penicillin—drug of choice in a wide range of infections.

BICILLIN is available in oral suspension, tablet and injectable forms

Wyeth® Philadelphia 2, Pa.

2 Convenient dosage forms

'Ilotycin,' Crystalline, Tablets
(ERYTHROMYCIN, LILLY)

'Ilotycin Ethyl Carbonate, Crystalline'
(ERYTHROMYCIN ETHYL CARBONATE, LILLY)

Pediatric

- Taste-tested by Lilly's Junior Taste Panel, the flavor of *'Ilotycin Ethyl Carbonate, Crystalline,' Pediatric*, is sure to please your young patients—as well as adults who prefer liquid medication.
- Well tolerated—There is minimal gastric irritation, nausea, and diarrhea.
- 'Ilotycin' does not predispose to monilial superinfection or vitamin B complex deficiency.

AVERAGE DOSAGE: Thirty-pound child, 1 teaspoonful 'Ilotycin Ethyl Carbonate, Crystalline,' Pediatric, every six hours; others, in proportion to weight. Adult, 200 mg. every four to six hours.

SUPPLIED: 'Ilotycin,' Crystalline, in 100-mg. or 200-mg. specially coated tablets. 'Ilotycin Ethyl Carbonate, Crystalline,' Pediatric, is supplied in 60-cc. packages. Each teaspoonful (5 cc.) contains 100 mg. of 'Ilotycin' as the ethyl carbonate.

Lilly

For successfully treating the most common bacterial infections

ILOTYCIN
(ERYTHROMYCIN, LILLY)
the Original Erythromycin

Eli Lilly and Company • Indianapolis 6, Indiana, U. S. A.

Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 36 October, 1953 Number 10

THE PHYSICIAN AND HIS ESTATE

HARRY A. BLACKMUN, LL.B.
Rochester, Minnesota

YOU, a professional person, hear much of estate planning. Your insurance man, your banker, your attorney, your accountant—all stress it. It is my guess that because you have heard so much of executors and wills, of insurance options and tax-free payments, of joint tenancy and tenancy in common, and of the marital deduction and intestacy, you have been overwhelmed by the detail and wonder why a thing which ought to be simple has become so complex. It is my intent today to emphasize not the details or the complexity but, instead, the position in which you find yourself in 1953, and the consequent necessity of doing something about it.

Let us go back to the year 1910. That is only a little over forty years ago and well within the memory of many of you. So far as taxes are concerned, life then was really very simple. There was no Federal income tax for that law was effected only as of March 1, 1913. There was no Federal death or estate tax. That came on the statute books only in 1916. There was no Minnesota income tax. That statute became effective January 1, 1933. There was no Minnesota inheritance tax. While several attempts had been made to create one, the statute which finally withstood the challenge of unconstitutionality was enacted only in 1911. Thus, in 1910, estate planning consisted of little more than determining the fundamental question of who was to receive what.

In contrast, consider 1953 and your own situation as a physician. Unless yours is a very special situation, you have already run head-on into some seemingly frustrating facts. You may have grown up in rather modest circumstances and obtained your academic and professional education only with a struggle paid for through sacrifice or by the assumption of debt or with the help of someone willing to support you while you went through medical school. Before these obligations were paid off, children came along and needed support and education and insurance protection. With ever mounting income taxes, you felt yourself fortunate if you were able to pay your debts and your current obligations from day to day. Saving tax-paid dollars for retirement has proved almost impossible. Yet if you surmount these obstacles, you are not yet through. It costs money to die. It is still a question of net, of gross less the respective bites taken by the hospital, the physician, the undertaker, the creditors, the lawyer and, most important of all, the tax collectors, both Federal and state. The size of these tax bites, if you are not aware of them, can be staggering.

Let me emphasize this in another way. It seems to me that you, as a physician, are confronted with certain "inevitables" in your life. First of all, you are a professional man and you are busy. You have little time beyond the demands of your profession and the reasonable ones of your family. Further, you have loved ones or, as the law sometimes calls them, "natural objects of your bounty." You will, whether or not you choose to face it, eventually die. That will be an emotional time for your family. When you die, there will be necessary court and administrative and tax steps to be taken. There will be costs,

---

Read at the Centennial Meeting of the Minnesota State Medical Association, Saint Paul, Minnesota, May 20, 1953.

From the Section of Administration, Mayo Clinic, Rochester, Minnesota.

perhaps fairly substantial ones. There will be taxes to pay. Do not be deceived into thinking that your estate is not large enough to incur a tax. The state inheritance tax exemption is usually small. The Federal one is $60,000, but even that is not large when one considers that insurance and your home are counted for Federal death tax purposes. Furthermore, those taxes must be paid. Only the net of what is left after the payment of debts, expenses and taxes will be left for your survivors. The last "inevitable" is not really one, but it is my guess that it applies to most of you. It is the probability that your estate plan, if you have one, is not up-to-date. One can say truly that it is obsolete if you are married and your will was drawn or your plan was formulated prior to April, 1948, only five short years ago.

Let us consider some of the legal terms and procedures which death may involve. If you die without a valid will, you die intestate and your property then descends according to the intestacy statutes. In other words, in those circumstances the legislature determines who your beneficiaries are and to what extent each benefits. There is an exception to this with respect to property held in joint tenancy with right of survivorship or with respect to insurance contracts where your named beneficiaries survive. A will is an instrument which, when properly executed by a competent person, operates to distribute the net estate of the testator. Subject to certain legal limitations, you may dispose of your estate by will just about as you choose. Probate is the procedure which the law has developed for the orderly collection of a decedent's assets, the payment of his debts, taxes and other obligations and the distribution of the remainder to the persons entitled thereto either by the intestacy statutes or by the will. Bear in mind that originally there were no rights of inheritance or to make a will. Those rights are among many others which are the product of centuries of human struggle and of legal development. Intestacy laws and laws concerning the formalities of wills vary from state to state, and death taxes in the various states are not uniform. Generally, the law of the state where you live applies to your intangible personal property, such as stocks, bonds and bank accounts, but the law of the place where your real estate is located governs the disposition of that real estate. Thus, if you die intestate owning real property in several states, it does not necessarily follow that all of the real estate will end up by inheritance among the same people and in the same shares.

Let us look at the death tax statutes a little. Under the Federal law, the gross estate in effect includes every property interest you own at your death (except foreign real estate) and even some you may not own. It includes property held in your own name, insurance, property owned by you and another in joint tenancy (with specified exceptions), certain transfers you have already made, et cetera. There are some deductions for administrative expenses, debts, gifts to charitable and similar organizations and a specific exemption. There is also the marital deduction for property passing from you to your surviving spouse, if any. Rates run in brackets beginning at 3 per cent and rapidly mounting. Except for property passing to a surviving spouse or to a charitable or similar organization, who gets what makes no difference under the Federal law. Under the Minnesota law, who gets what does make a difference, for the rate and the exemption depend on the closeness of the relationship between you and the particular beneficiary.

Why should you plan your estate? There are, of course, several reasons. Here are a few:

1. You plan in order to effect tax savings, that is, to enable your estate to reach the objects of your bounty with as little tax as possible. Take an example. Suppose you have a net estate of $100,000 before the specific exemption. You have a wife and three children, but your wife has no assets. Prior to 1948, if your desire was to give your wife the benefit of that estate so long as she lived and then to have your children enjoy it, this could have been done by a testamentary trust, and the plan would have incurred a Federal death tax of $4,800. Today, by proper planning, that estate can be brought down into the next generation at no Federal death tax cost whatsoever. Obviously, that is a very easy way to save $4,800.

2. By planning, you, and not the legislature, determine who gets what. By taking all your property interests, including insurance, into consideration, you can evolve usually a very effective and satisfactory plan. If you wish to use the trust device, you can project your wishes into the future to a substantial degree.

3. You determine where certain burdens are to rest. I have in mind such things as taxes, mortgage obligations and the like.

4. You choose, within limits, the representative who will be responsible for your estate during the probate period. Otherwise, the appointment of this representative is up to your survivors and the court and may itself be the subject of litigation.

5. If you have minor children, then in Minnesota you may by will nominate a guardian of those children to act after the death of yourself and your spouse. This nomination is subject to veto by the child when he becomes fourteen, but it is a rare case where the parent's testamentary nomination is not persuasive.

6. You eliminate the otherwise ever-present complaint that, "If Uncle Joe had only made a will, I know I would have been taken care of."

7. You are compelled to exercise your best judgment in the disposition of property which you have taken a lifetime to accumulate. The problem deserves the exercise of that judgment.

8. You seriously consider ways of reducing the cost of dying and, strangely enough, you often obtain amazing results in that direction.

9. You are compelled to select an attorney. Your selection may also suffice for your survivors who otherwise must make that decision among many others at the time you die.

10. You become acquainted with the problems that are present and you assist in their solution. Otherwise, you leave that task to your beneficiaries.

I suggest, in general, the following for proper estate planning:

First.—Assemble your facts. Know what you own and where the evidences of title are. It is always helpful to prepare a list of your properties and their location so that your survivors and the attorney do not have to indulge in long guesses.

Second.—Select the very best legal counsel you can obtain. Usually, this does not entail any additional expense.

Third.—Reveal everything to your attorney. Do not hold back any facts or attempt to hide them. His advice is deficient if it is based on insufficient facts.

Fourth.—If possible, let your spouse participate and plan your respective estates together. The marital deduction provisions of the Federal law almost compel this. If you have a mature son or daughter, consider having him or her share in the discussions.

Fifth.—Have your attorney investigate the possibilities of the marital deduction and do not let it be brushed aside without some consideration or because it is too complicated.

Sixth.—Provide for sufficient liquidity in your estate and for proper flexibility. An estate can be too rigidly planned.

Seventh.—If you practice as a partner, and do not have a formal partnership agreement, you should consider the advisability of executing one. That agreement, in my opinion, should contain a specific provision as to what happens in the event of the death of a partner.

Eighth.—Choose your executor with care.

Ninth.—Discuss the identity of a guardian for your children with your wife and, if possible, with the person you have in mind to act in that capacity.

Tenth.—Bear in mind that while taxes are important, they are not necessarily the governing factor in estate planning. Your desires and the needs of your loved ones are more important, but usually they can be made effective even in the light of proper considerations for the tax burden.

Eleventh.—Keep your estate plan up-to-date. Do not work on it now and assume that it is good for the rest of your life. Laws change, people die and are born, and your wishes change. This is particularly true where your family is a growing one. What is desirable in 1953 may not be what you want in 1957.

Twelfth.—Give your wife some idea of your desires as to the use of your property after your death. Should she continue to live in the house? Where should she go for investment advice and general counsel? There are many tax savings possibilities during probate and after it, and an able lawyer can help her in many ways.

Bear in mind certain other things. The first is that tax avoidance is not the same as tax evasion. Tax evasion based on dishonesty is reprehensible. Tax avoidance is not. You would not pay $3 for a book at one store when you can buy the same book for $2 next door. Further, always assume that every property interest is taxable and do not

(Continued on Page 1060)

THE DOCTOR AS A MEDICAL WITNESS

RAYMOND SCALLEN
Minneapolis, Minnesota

TO PARTICIPATE in your Centennial Meeting is a profound honor, and as a member of the legal profession I congratulate you most heartily on the achievements of your profession during the century which now becomes history.

In view of the historical significance of this occasion, it is regrettable that time does not afford an opportunity of making some observations with reference to the beginnings of medical testimony in Minnesota. Those beginnings were auspicious and of great interest in view of the development of medical testimony in the courts today. Regrettably, then, for practical considerations they must be left for examination at another time and we direct our consideration to the doctor as a medical witness today.

Usually the testimony of a doctor in court is that of an expert witness. What, then, is an expert in contemplation of law? An expert is a person of superior experience, knowledge or skill in any science, art, trade or business. The opinions of witnesses possessing peculiar skill are admissible whenever the subject of inquiry is such that inexperienced persons are unlikely to prove capable of forming a correct judgment without such assistance. The doctor's place in modern litigation is therefore of great importance. The marked increase in litigation involving injuries and death arising out of industry and the operation of motor vehicles has brought medical witnesses almost daily into our courts. The doctor's presence in the courts is not so much a matter of choice as of necessity. It may well be essential to the administration of justice. Certainly in the defense of a malpractice case, for instance, it is of the highest importance to the defendant that members of his profession stand willing to put aside their work for a period of time so that he may have a proper defense. In any event, the medical witness's place in modern litigation is of high importance to the profession because, when the doctor enters the courtroom, he becomes a public relations envoy for good, evil or indifference as far as his profession is concerned. He ought, then, to measure up to the highest standards of a noble profession. The seeds of paternalistic, governmental control can be sown far more often in the courtroom than most people realize when these standards are not maintained; nor is the profession helped by the individual who disdainfully holds himself aloof with ill-concealed contempt for the courts and their procedures. It is obvious that if the best minds of the profession should adopt this attitude, then our judges and juries would never hear the outstanding member of the profession. Fortunately this is not true, and in a proper case some of the great leaders of the medical profession with real modesty and humility appear in court and make a substantial contribution not only to the knowledge of the judge and the jurors with respect to the medical points in question, but also by impressing upon these good people the alertness and indefatigable industry of the medical profession. But viewed from another angle there is a far different type of expert who sometimes comes to court—the man who is recognized by the laity as being in the profession only for money, who is callous and hard, who departs from ethical standards, who charges inordinate fees to people who cannot afford them—such a physician is likely to make little impression on the average jury despite professional brilliance. But upon the exceptions we need not dwell, so we address ourselves to the appearance of the average practitioner, its effect upon him and upon the court.

Keeping in mind that some phases of the case may well depend upon medical testimony (and with reference to malpractice cases almost without exception the case *will* turn upon the question of medical testimony because such a case is concerned with standards of care and proximate results), it should be observed that, first of all, the medical expert is coming into a friendly atmosphere. From the standpoint of accommodation, most trial counsel and judges are very considerate in giving priority to medical testimony. There are occasions, though, when the medical witness will be well advised to spend some time in the

---

Read at the Centennial Meeting of the Minnesota State Medical Association, Saint Paul, Minnesota, May 20, 1953.

courtroom and hear the testimony of those who precede him, because then he is testifying from a knowledge of a more complete picture, from a broader canvas, and may really save himself some professional embarrassment. He will know when he testifies that he is not talking out of context. Remember, too, that most people highly respect doctors. This, of course, includes juries. The jurors usually listen with great interest to a medical witness. If he is fair and reasonable, they feel that they are learning something, and, in turn, the medical witness may feel that he has made a contribution to the administration of justice and has enlarged his circle of friends. He has brought, moreover, sound medical doctrine before this judge and jury and has made an impression that is deep and lasting. Most juries sympathize with the doctor—they understand that he is human, that he works under great pressure, strain and responsibility—so don't be afraid of juries, the chances are they will like you.

Naturally a medical witness should know what he is talking about, particularly the facts pertaining to the diagnosis, therapy and prognosis of the case with which he is concerned, and of course the medical principles applicable. He should be prepared, of course, on the matter to be covered by his testimony. He should know and understand his records and should have studied them before he comes into court. But he should be prepared in a wider sense. In a greater degree than is realized, this preparation takes place in the formative years, the pre-medical years. Nobility of soul, depth of character, and integrity do not usually come unbidden and without perseverance. They are the first essential of the medical witness. Of course there must be competent professional training and experience, but after all it is a man who is speaking—a man who should merit the respect of his listeners in the solution of the problems involved, and he should show them that he possesses the fundamental prerequisites that make him a man worthy of belief. On the technical side, he should have command of language, enunciate clearly without affectation, and possess a didactic faculty. These qualities are not acquired quickly, but come with constant study and the every-day habits of the man. His bearing should be dignified and gracious without condescension. He should have an ease of manner which may be inspired by the *aequanimitas* of Sir William Osler. He should listen carefully to the questions propounded and respond with truthfulness, precision and promptness, unless the question is obscure, confused or meaningless. He is not required to give a yes or no answer, unless obviously that is the only type of answer responsive to the question. And if the question is clear, but beyond the knowledge or experience of the witness, he should not hesitate to say so. The medical witness who stays within the scope of his knowledge and experience and bases his testimony on sound medical principles is on completely safe ground.

It is a good rule to avoid volunteering testimony. To do so suggests partisanship and may disturb the orderly presentation of proof by experienced trial counsel. A trial lawyer has his plan of action—on him rests the responsibility for presenting the case. If he desires a general statement or narrative he will put a question that will enable you to answer in general, descriptive terms. And if he is alert, he will give you the opportunity on redirect examination to clear up anything that needs explaining, particularly when you may have had a hard time under cross-examination. It is better, then, to let counsel try the case.

Above all, be yourself. That is far easier than imitation, no matter how great a regard you may have for the forensic accomplishments of some member of your fraternity. And you may be surprised to learn that you are better than your mental model. This knowledge will bring you comfort and make you feel confident of your own ability.

A great deal has been written about cross-examination. It has its place in the trial of a lawsuit. Properly conducted it is the best test we have of accuracy and truthfulness in the disposition of issues of fact. And the medical witness who stands on the safe base of which we have previously spoken, within the limits of his knowledge, experience, and sound medical doctrine, need have no fear of cross-examination. Usually the cross-examiner will let you alone, but if he does decide to question you at some length do your best to maintain your gentlemanly demeanor, even if in your opinion he is not coming up to that standard. Patience and forbearance are great qualities. They are illustrated by the story, perhaps apocryphal, which is concerned with the interview between a doctor and a patient whose wife had a temperament leaving something to be desired. The doctor, marveling at the calmness by which this man had maintained domestic tranquillity for many years, finally asked him,

"Well, certainly, during the period of your life, you have had many differences of opinion with your wife?"

"Certainly," the patient said, "and some very marked differences of opinion."

"Well," said the doctor, "didn't these differences of opinion cause a turmoil in your household?"

"Oh, not at all," said the patient, "because I never told her of those differences."

Well, perhaps you are not required to exercise such great restraint, and if you reach the point where you feel that your patience has been pressed beyond reason you may console yourself with the episode of the cross-examiner for the defense in a case involving injury to an elderly man who entered upon some dangerous premises although they were clearly marked as such by a placard fixed at the entrance. Defense counsel's inquiry centered upon an examination which the doctor had made of this man's eyes. It ran something like this:

"Doctor, you made an examination of the eyes of this plaintiff, did you not?"

"Yes."

"And by your examination you found nothing organically wrong with those eyes?"

"That is correct."

"And those eyes responded to light and accommodation, did they not, Doctor?"

"Yes."

"And that indicated that the man's eyes were functioning?"

"Yes."

"Then, Doctor, if you made such a complete examination, will you kindly explain to this court and jury why this patient of yours, whose eyes were in the good condition you have explained, entered upon these dangerous premises although there was a sign which plainly designated them as such?"

The doctor said, "Yes, I can explain."

"Well, Doctor, will you kindly explain?"

"The explanation is simple," said the doctor. "My patient couldn't read."

And normally, too, unfair cross-examination, which is really quite rare, if anything enlists the sympathies of the jury toward the witness, and most trial lawyers know it.

One point that is frequently referred to is the question of textbooks. Actually the analysis of this point could be made the subject of special treatment. The rule is that textbooks may be referred to only on cross-examination for the purpose of impeachment—that is, showing that the witness doesn't know what he is talking about, or worse, that he is not telling the truth. A textbook, of course, is something that has been written by some man or group of men presumably learned in the field on which they write. If a textbook is shown to you, first of all be sure that it is a standard work. Notice whether or not it is a recent edition. It cannot be used against you on cross-examination unless you admit that it is a standard text, but if you do admit that it is such a text, observe carefully the quotation which will be presented to you and see whether that statement is completely destroyed by something that follows. In other words, see whether the doctrine set forth in the textbook really is taken out of context. The use of a textbook by a cross-examiner may turn out to be a greater boomerang to him than the mightiest product of the Australian aborigine.

By your presence in the courtroom you represent the members of an honorable profession, you represent that host of devoted men and women who have worked so arduously for the good of mankind—industrious, faithful doctors, who have brought comfort to those in pain, have restored the crippled to a useful life, have removed the worries and troubles of many, have restored a father to his fireside and a mother to her home, who, skilled in the care of sick children, have relieved the heartaches of worried parents, who have tenderly brought new life into the world and have eased the last moments of the dying—those men and women of your profession whose very greatness caused them to recognize with deep reverence and humility the profound truth that they used their skill as humble agents of Almighty God in the merciful administration of the healing art.

So when you cross the threshold of the courtroom and take your place on the witness stand, let your words re-echo the great deeds and high principles of those mighty heroes of your profession and you will experience no greater professional reward than to know that you are worthy of them.

A COUNTRY NEWSPAPERMAN WANTS MORE "HORSE AND BUGGY" DOCTORS

ALAN C. McINTOSH
Luverne, Minnesota

THE medical profession is guilty of being the worst practitioners of understatement of any of the four estates, medicine, the law, the clergy, and the press.

You usually preface some painful bit of minor torture by saying with a hypocritical smile, "This may hurt a little bit."

I've always thought Dr. Sherman's* great moments in life come when he gets a chance to wash out my ears—or to rip off an adhesive bandage. I think no kid shooting off a Roman candle has as much fun as Sherman, when Doc gets a chance to rip an adhesive bandage off a hairy-chested man. And you always say, "This may hurt just a little."

When I say today, "This may hurt a little," believe me it is not from a desire to get even for the pain and bills I have endured, but with loving affection. It may hurt a little but I didn't come up here to waste a day of my time in apple polishing.

I say that America needs more "horse and buggy doctors." When I say that, I do not advocate turning back the clock. When I say "horse and buggy," I do not denote a bygone era. When I say "horse and buggy" I do not imply a place, such as a rural community. Neither does the "horse and buggy doctor" label pertain to a general practitioner nor to a specialist.

I use the term to pay tribute to a philosophy of service—an idealism of the soul, a state of mind as regards humanity—as an emblem of glorious service. Because—not *every* doctor is entitled to that emblem. We have far too many doctors, who never make a night call. We have far too many specialists, percentage-wise. We have far too many dollar-chasing doctors. We have an adequate number of phoneys. But we have a crying need for *more* "horse and buggy doctors." This may be an atomic age but the "horse and buggy" philosophy toward mankind is not outmoded.

It would be easy for me to thumb through my mental scrapbook and get terribly cynical in my remarks. I made a comment about Dr. Sherman washing out my ear—I am completely deaf in one ear because a damn fool doctor in North Dakota treated me with cherry cough syrup for a cold instead of for a mastoid. I am bitter about the surgeon in a state to the south of us who prays ostentatiously before every operation. I am not jeering at religion but I always thought his praying was mostly showmanship inasmuch as he was a notorious fee-splitter. I always thought he was trying to impress the family rather than talk with God. I burn when I think of the specialist who walked off on a young woman losing complete vision in one eye because he didn't want to miss a golf tournament. I think of the helpless patient trapped between the "ethics" of two doctors, the one who suggested a cardiograph and the other who told him to mind his own business. The patient suffered a heart attack and a stroke and lingered on as an invalid the rest of his life. I am still mad at the doctor in a San Francisco hotel who walked down one floor, picked up a knife and lanced a tiny swelling, then charged me $15.

But I am not here because I am cynical, but, because I love doctors. To me they are heroes in disguise. I have a great love for them and for the American system of medicine.

You doctors have sold your profession to us on the basis of a painting which you have hung in your offices all over the country. I'm telling you that it is high time you started making good on that painting, redeeming in full all the pledges you have made. No need to remind you of that famous painting of Sir Luke Fildes. You all know it—the painting of the little child lying on her bed, the agonized father and the terror stricken mother in the deep watches of the night by the flickering bedside light, and in the foreground the calm, reassuring face of the doctor—a source of strength and hope. The Doctor! In the noblest sense of the word! Is it a specialist sitting there? No! Is it one of those 10 a.m. to 4 p.m., appointments only, Park Avenue doctors sitting there? No! Is it a ghost surgeon sitting

---

Read at the Centennial Meeting of the Minnesota State Medical Association, Saint Paul, Minnesota, May 20, 1953.

*C. L. Sherman, M.D., of Luverne, Minnesota.

there? No! You infer that it is a horse and buggy doctor, watching the flicker of life on that little girl's face.

You, and you alone, have to make good on that picture for America tomorrow. That picture is my concept of a doctor. You have to make that picture come to life every day of the year if you are to keep the faith. And if you break faith with the spirit of that picture, then God help you, the people won't. I am not advocating, when I say we need more horse and buggy doctors, turning the clock back on the tremendous advances made by researchers of medicine during the past decades. I am not turning my back on the advances that will be made this month, this year, next year, and the years to come. I'm pleading that you *reconsecrate* yourselves to the glorious idealism and the devoted service of the doctor in the picture, the horse and buggy doctor who is a tower of strength to the family.

The good will that the medical profession enjoys today was not built up by your specialists although they make the most money. This good will was built up by the general practitioner. I'm telling you that there is danger in finding that your public account of good will will be overdrawn and exhausted by the high fees charged by some of the profession, usually the specialists. We see disturbing little signs that trouble us—signs that indicate there is danger of bankruptcy of your resources of good will. The boy over in the University of Minnesota that told me he was going to be a doctor and specialize because that's where the big dough is . . . and the way to be prominent in society. It's true, that the specialist does make 22 per cent more money than the general practitioner. And I could concede that the picture is changing, that ten years ago only one in ten medical graduates went into general practice, that today six out of every ten are going into general practice. It's about time. The "two platoon system" used by the specialists, when one good general practitioner could have done many of the jobs, has broken many a man financially. I'd like to toss an orchid to the Minnesota State Medical Association for providing scholarships that will filter medical graduates back to the rural areas. For we haven't enough to go around.

We see a disturbing sign in the public's attitude because of the high cost of sickness. There is this growing suspicion of specialists and their bills. We see a growing horror of hospital bills. The doctors have a long road ahead of public relations and you'd better get busy telling your story. It's hard to get a man excited about the "American way" if he has a fistful of medical bills, that will take him years to pay off. Ill-health used to be personal misfortune. Today sickness is stark economic disaster, a luxury, if you can call it that, reserved only for the very well to do.

Something will have to be done. The doctors are going to have to take the lead in meeting this problem of expense. It won't be solved by walking coldly aloof on the other side of the street, with only your ethics to keep you warm. Otherwise this issue will be grabbed by the lefties and the political do-gooders, the cheap politicians and the Oscar Ewings (maybe the Humphreys) and they'll solve it on the basis of socialism. Pray God that day never comes for America.

You're going to have to remember that basically, and generally, the people love you, and trust you. They may never erect any monuments to you. They'll reserve those monuments for the statesmen, and even cheap politicians. But who wants a monument of cold granite anyway? I think the monuments you have are so much more beautiful—people walking up and down the streets of Minnesota, laughing, loving, working, enjoying life. People who, had it not been for your skill would have long ago been only a memory. I think of Warren Schoon, the Ford dealer in Sioux Falls who would have had a crippled arm for life; I think of Vonnie Hatting, who by right should be dead—head broken, a battered, bleeding fragment of a woman . . . but today a vibrant, beautiful, living woman. Yes—these and thousands more are the monuments of American doctors—the kind of monuments I like to see.

You have had the most brilliant firm of public relations counselors any group could have had, but it's going to take more than Whittaker and Baxter to tell your story. You're going to have to start telling it yourselves. Some of you, as individuals and as medical societies, are doing an utterly stupid job of basic public relations. Probably 25 per cent don't belong to your Chamber of Commerce. Don't expect the press and your community to play Paul Revere for you if you shirk your professional and community obligations. I think some of you are shirking these community obligations. Some of you are short-cutting on your professional obligations and some of you are ducking your moral obligations. You're the ones who overdraw the good will account of the medical profession. You worry more about your bank accounts than your patients.

Let's get one thing straight. I want to pick my own doctor. I want my doctor to be wealthy. I don't want any stumblebum failure working on this old hypochondriac.

I was in Europe last fall. I made a special point of investigating public reaction to socialized medicine, from the northernmost tip of Scotland to the south of England. It's in England to stay. The people now have the insidious habit. It's like taking sleeping pills—they know it's not good for them, but it's an opiate because they think it's "for free." I want none of that type of medicine for my wife; nor for my little four-year-old girl; nor for myself. I repeat—I want a doctor that worries about ME and that I, not a government, pay for his worry.

I was sitting at a banquet one night, several years ago with Dr. Adson. He was thumbing through a pack of little memo cards. I asked him what he was doing. He said: "I'm looking over the cards of the patients I'll be seeing tomorrow, their histories and their needs."

Do you think that five years from today your British doctor is going to be studying his patients' case histories when he is out for the evening? Not on your life. He's going to be a hack, working from 9 a.m. till 4 p.m., dishing out handfuls of pills, seeing too many patients, not caring enough. And not making enough.

All the integrity and zeal in the world to serve, seldom survive when there is no incentive for profit. Minnesota doctors enjoy the highest income of any state in the nation—and I think that's fine. Maybe that's got something to do with Minnesota's longevity record, and maybe not, anyway I want my doctor to be well off. That's small compensation for cardiac conditions, overwork, hypertension. But I don't want 35 per cent of the doctors doing all the hard work and the others skimming the easy gravy. If you want me to be blunt about it—not all the members of this audience deserve the title "horse and buggy doctors"—some of you don't have the ideals of service of a second-rate plumber.

I want the University of Minnesota School of Medicine to do more plugging for general practitioners, realize the great need for more of these doctors, and lay less emphasis on specialization; I want the University to give the students a course of ideals and consecrated service as well as teaching them how to cut up a cadaver. I love doctors. I like the ones we have in Rock county—I think of Doc Bofenkamp in a blizzard, going by car, by jeep, and then by tractor ten miles through the drifts to see a dying man; or Doc Martin running through the knee-deep snow to reach a boy lying shot in a corn field; or Doc Boone who spent one whole night fighting drifts trying to reach an emergency case; or Doc Sherman, my most beloved "horse and buggy doctor," who still gets up in all weather and in all hours, after fifty-three years of practice, to answer calls for help.

I gave my supreme personal tribute to my doctor at the Mayo Clinic a few years ago, Dr. Lou Prickman. I presented him with a copy of "A Doctor of the Old School" by Ian MacLaren—and greater recognition I cannot give. You can find the "horse and buggy doctors" anywhere from the dingy office on a small town's Main Street, to the marble halls of a clinic. A "horse and buggy doctor" doesn't pertain to an era, as I said, neither does it specify a community, nor whether a man is a general practitioner or a specialist. "Horse and buggy" denotes a state of mind and a responsiveness to an obligation. It bespeaks a philosophy. It is that type of philosophy and service we need for the doctors of America.

I can't help thinking of what doctors have meant to me through the years. I never have left Rochester in twenty years that I haven't from either a pullman window or a car window, looked back at the clinic tower and said, "Thank you God." Although it may be the home of advanced medicine it still lives and breathes in its marble halls with the burning idealism of service of the original country doctor Mayo. I think of what Doc Prickman has meant, not only as a fine doctor, but a friend, a confidante, a person to whom I've run for help in time of trouble. And I've always had the feeling that I'm not a number on a card but a friend.

But these fine things can be lost. Let me tell one more remembrance of the Great Dr. Adson. He told me how he had to let a most promising assistant go because the man didn't like to have to get up at night for emergency cases. And Adson boasted to me how quickly he could answer the phone, be out of bed and dressed and on his way. "We've got a lot of brilliant young men," he said, "but they haven't got the faculty of getting the good will of the patient. They want to stop at 5 p.m. I asked them to put themselves in the patient's place, where time means everything, and a doctor who won't work past 5." The great Adson told me that he regarded himself as a bridge, trying to be a link between the "horse and buggy" philosophy of the original Mayos and the new medical generation.

I'm going to wind this up. I've probably made a few of you mad and bored the rest. If I have any advice to doctors it is this: Never forget the sacredness of your profession, never get so blasé that you forget that to the patient lying on the sickbed, or to the parents of a sick child, you enter that room, not as a tradesman. You may be only five feet two inches tall, but you walk in the room as a big man, and there is a silent prayer on our lips as patients and parents, that God walks in with you. Remember, you come in the sick room as the bearer of strength, courage, hope, and faith, as well as technical skill. You can be a hero to your patients if you will let that inner light of zeal shine through.

Speaking of the country doctors of the old school, if I had my way, the University of Minnesota Medical School, and every medical school, would add one requirement to its courses. Before any man or woman could be graduated he would be required to know that classic by Ian MacLaren, "A Doctor of the Old School." I'm not ashamed to say that I read it every year and read it unashamedly, with tears in my eyes, as I scan through those familiar passages. And last fall I visited the rugged highland country in Scotland where that famous Scotch author made the locale for this all-time classic. Even if it is written in Scotch dialect, it's all beautiful—every word about Dr. MacLaren and all I can say is that if you can read it without a wisp of a tear, then frankly, "damn you."

The most poignant passage of all is the final chapter, "The Mourning of the Glen." Dr. MacLaren has died, and a terrible blizzard has buried the Scotch highland area beneath mountainous, impassable drifts. A handful of the good doctor's friends are bemoaning the weather—that otherwise everyone would have come to the country doctor's funeral. James Soutar didn't think that there would be more than five besides the minister at the service. Then one of the highlanders looks up and shouts, "There's a puckle of Dunleith men coming."

Then they report three more Urtach shepherds fording the icy river up to their waists and eighty-two-year-old Adam Ross has to be forcibly restrained to keep him home from the funeral. Lord Kilspindie comes from his Muirtown castle with his broken cart and exhausted horses from battling drifts for sixteen miles. So they held the funeral on that bitter day, and there were not just five there, but a hundred rugged souls of the Glen (while the women folks and children wept at home). And the minister says, "It's a bitter day, friends, and some of you are old, perhaps it might be wise to cover your heads before I begin to pray."

Lord Kilspindie, standing erect and grey-headed between the two oldest men, replied with great dignity! "We thank you, Rev. Davidson, for your thoughtfulness. But he endured many a storm in our service and we are not afraid of a few minutes' cold at his service."

After the doctor had been laid to rest there was the bitter debate over the epitaph to be placed on the cemetery gravestone.

And Lachlan Campbell came up with the one that the community that mourns the doctor agrees is most right and fitting—"Come, ye blessed of my Father, I was sick, and Ye visited me."

What is going to be your epitaph?

HEW SURVEYS UNION AND MANAGEMENT HEALTH PLANS

A study to be released in a month or so by the Department of Health, Education and Welfare will go into the history, development and present status of health programs set up as part of management-labor contracts. It will be titled "Management and Union Health and Medical Programs," and will be available at the Government Printing Office. Discussing the project at the AFL convention, Secretary Hobby declared: "Many of your unions already have health centers. Many more need them. Our survey will provide information which may help unions to establish or improve their health services. Incidentally, one entire chapter of this booklet is devoted to the fine Labor Health Institute which your Teamsters Union operates here in St. Louis."

THE PROBLEM OF LUPUS ERYTHEMATOSUS

HENRY E. MICHELSON, M.D.
Minneapolis, Minnesota

LUPUS erythematosus in all of its manifestations still remains an etiologic, pathogenic and therapeutic problem. Despite the tremendous number of articles written on the subject there is little which explains the basis for the development of this disease. Even though the problem as a whole still confronts us, however, there are many aspects of it upon which we may speculate from such facts as have been fairly well established and from well-founded observations. Over the years a groundwork has been laid upon which new facts may be added and eventually the whole picture will be clear.

The history of the disease is well known to all dermatologists, and early recognition is possible of both the strictly cutaneous form and the type which has the signs and symptoms of a severe general malady. These two main groups are so distinctly different, however, that the question arises as to whether we may not have erred in assuming that they are diverse manifestations of one disease.

Chronic Lupus Erythematosus

Localized, discoid, or chronic lupus erythematosus was considered to be a form of lupus vulgaris in the early days of dermatology, but I believe that today tuberculosis as a cause of any type of lupus erythematosus has pretty well been eliminated; certainly it has been in this country. Having excluded tuberculosis as an etiologic factor in lupus erythematosus, no other positive or even indicative cause has been advanced. There have been speculations but none has been accepted which would serve to narrow the search.

Are there any facts about chronic lupus erythematosus which are an aid in its interpretation? The lesion is essentially a disk of chronic inflammation which progresses peripherally and heals with central atrophy. It occurs predominantly on the face or the "V" or sides of the neck, occasionally on the dorsa of the hands. It rarely occurs on covered areas of the body with the striking exception of the scalp. This leads to the assumption that light sensitivity plays a role in localizing the disease. Granting that this seems to be true as far as onset is concerned, I doubt if the sun's rays play a very important part in the continuation of the process, for many patients with the chronic form of the disease lead outdoor lives and, with the exception of some reddening of the periphery of the lesions in the early spring, no further exacerbation occurs. Further, why are the lesions discoid if sunlight is a cause? If that were the case the lesions should appear over the entire exposed areas. And why do we see scalp lesions? It seems to me that a few striking examples of sunlight sensitivity have overimpressed us.

Chronic lupus erythematosus involves the so-called seborrheic areas and thus topographically aligns the condition with the seborrheic dermatitis and psoriasis. The variations in the morphology of chronic lupus erythematosus are not unlike those of lichen planus. Plaques of these two diseases occurring on the sides of the neck, the dorsa of the hands, and on the scalp look surprisingly alike and microscopically are very similar. In fact the histology of chronic lupus erythematosus reveals a well-ordered pattern which can be applied to many skin diseases but in particular to lichen planus and psoriasis. Three main pathologic manifestations occur in sequence in the disease. First is the appearance of vascular lesions, then edema and cellular infiltration occur with subsequent effect on the connective tissues, and finally, epithelial reactions are brought about as a result of the underlying alterations. There are many minute changes of the cells in the infiltrate, for example, pigmentation, parchment-like hyperkeratosis, and others, but a comparable pathologic progress takes place in the other two diseases named. Thus I believe we might well group chronic lupus erythematosus with seborrheic dermatitis, psoriasis, and lichen planus for purposes of study and that many of the known facts, especially those pertaining to psoriasis and lichen planus, may with good reason be applied to chronic lupus erythematosus.

From the Division of Dermatology, University of Minnesota, H. E. Michelson, M.D., Director.

Read at the Centennial Meeting of the Minnesota State Medical Association, Saint Paul, Minnesota, May 20, 1953.

Differentiation of Types

The Subacute Form.—The most challenging question is whether or not chronic lupus erythematosus and acute or systemic lupus erythematosus are manifestations of the same disease. When this question is posed, the usual reply is that patients with the chronic form of the disease have been known to develop unmistakable symptoms of the systemic type. This is true but percentagewise is an exceedingly rare occurrence, so rare in fact that one might suspect that the acute process was superimposed, or by mere coincidence attacked a patient who had the chronic disease.

One source of error, or at least of confusion, lies in our inability to evaluate the systemic effects in patients with chronic lupus erythematosus for there are no clinical or laboratory methods for distinguishing patients whose condition is strictly localized from those who have systemic alterations. To the latter group belong those individuals whose affection has been diagnosed as subacute lupus erythematosus. It is most difficult to define the boundaries of the subacute type. The diagnosis is made upon the character and the extent of the cutaneous lesions, upon their tendency to progress rather rapidly, upon the rise and fall of acute signs in the lesions, and upon minimal systemic findings, such as slight elevation of temperature, malaise, and other vague but persistent complaints. If the process subsides and the skin lesions behave like the chronic discoid form, the patient's chance of survival is good, but if the process continues, we must remain apprehensive. Lupus erythematous cells are not found in such cases as a rule, but if they are found we at once reclassify the case as acute even though there has been no alarming increase in the severity of the process.

The finding of the lupus erythematous cell prompts many to administer cortisone even though there are no life threatening indications. What is hoped to be accomplished thereby? An improvement in the skin signs, an improvement in the general condition, or are steroids given with the hope of preventing a more severe state? Does a maintenance regime need to be instituted? Personally I am against steroid therapy in such cases and use it only when real acuity appears. *Lupus erythematosus chronicus* (or subacutus) *in extenso* is a term the Germans use and in such patients, have used the sulfonamides and more recently the antibiotics. I believe antibiotics should be tried before resorting to steroids. Prolonged rest (as for patients with tuberculosis) cure is ideal but is not possible for most people.

I do not believe that so-called subacute lupus erythematosus is a prodromal stage of the acute disease, but rather that it is a mild form of the systemic variety, having a fair prognosis. A most rigidly ordered existence may give the patient the time that is necessary to bring the disease under control by natural means. Strangely, the cutaneous histology in most such cases is that of the chronic type.

In summary, the diagnosis of subacute lupus erythematosus is arbitrary on the part of the clinician. It should be made only after a thorough evaluation, and must take into consideration amelioration or increases in severity of symptoms. It is distinctly a diagnosis which demands flexibility of decision. In its treatment much depends upon the patient's co-operation. The steroids do not eliminate the possibility of a turn for the worse.

Acute Lupus Erythematosus.—The term acute lupus erythematosus is an inclusive one. It is a poor term but is fairly well understood. Systemic lupus erythematosus designates the main characteristic of this form of the disease but carries no connotation that it must always be acute. I have tried to coin both a term and a classification to cover both types of this form of the disease but have not succeeded. Used broadly, acute lupus erythematosus means patients who have symptoms and signs which, when viewed in their entirety, make up a syndrome.

Acute lupus erythematosus begins with a prodromal stage. There are no outstanding symptoms. The patient is neither sick nor well, but does not feel good. The prodromal stage may be short, and the change for the worse occurs with the appearance of skin lesions. This group of cases constitutes the so-called septic type. The findings are (1) fever, (2) eruption, and (3) leukopenia, with or without (a) prostration, (b) urinary findings, and (c) the finding of the lupus erythematous cell. If one or more organs such as the heart, spleen, lungs or pleura, or the joints are particularly involved, one may or may not have their attention drawn to that. The course of the disease is stormy, the prognosis guarded, mostly bad, and the outcome today depends upon the handling. The end result is not a happy one, even though the patient's symptoms are reduced below the threat to life.

The other main type of acute or systemic lupus erythematosus is that in which the prodromal period is long, lasting for months or even years, and the symptoms, having passed through a period of being vague and disseminated, tend to become fixed in some chronic complaint such as arthritis, chronic diarrhea, or chronic bronchitis among others. As the symptom or combination of symptoms progresses, the patient's condition becomes critical and correct diagnosis is imperative

Treatment

It is very difficult to outline a treatment for any form of lupus erythematosus. Every case must be individually appraised and the treatment is based on the exigencies of the particular case.

The chronic discoid type is treated with the hope of causing a disappearance of the lesion with as little subsequent scarring as possible. Remedies used are both local and systemic. There is no known application which it at all effective; in fact, all ointments and lotions seem to exert a deleterious effect and therefore should not be used at all. Freezing with a solid carbon dioxide pencil is a valuable remedy in chronic stationary lesions, but should not be used if the lesion is extending and is quite active at the periphery. Because of the light sensitivity which is often present in the lesion itself, and because exposure to sunlight has been known to cause rapid extension and even provoke acute systemic symptoms, treatment with ultra violet lamp exposures should never be done. X-ray treatment also is dangerous and is not to be recommended.

Three drugs are of value for the chronic discoid type. They are bismuth, gold and atabrine. Bismuth is given in the form of bistrimate tablets or by intramuscular injections of an oily suspension of bismuth salicylate. Bismuth has not proved to be of value in my hands and has been discarded.

Gold is given intravenously in the form of a sodium salt. Courses of well-regulated doses are administered for periods of from six to eight weeks. This treatment has some enthusiastic adherents, but gold has caused severe reactions and the results are not uniform or even reasonably satisfactory. I have also given up the use of gold.

Atabrine given in the form of 100-mg. tablets has proved to be worth a trial in most cases of chronic discoid lupus erythematosus. It has been used for about two years and is not wholly evaluated. It causes a yellow pigmentation of the skin which persists for a long while and there have been many reports of reactions of a severe nature when the drug was used as a malaria preventative. Anyone using atabrine must acquaint himself with its pharmacology and in the event of even a slight reaction the drug must be stopped. At the moment atabrine is my drug of choice in this type of lupus erythematosus.

In the treatment of the subacute variety one must consider the present state of the condition and the possibility of extension and the development of acute systemic symptoms. The patient should be hospitalized for the first weeks of treatment if possible. Thorough physical examinations are a prerequisite. The treatment must be decidedly individualized. Bismuth has been used with safety. Gold should not be used. Atabrine has been effective but the patient must be scrutinized more carefully than in the chronic cases. The blood and urine must be examined every three or four days. The general care is essentially that of guiding a patient through a moderately severe illness. Antibiotics may be needed. Prolonged observation is necessary even if there is satisfactory progress. If the patient's condition worsens or if lupus erythematous cells are found, the use of steroids may be considered but should only be used in the hospitalized patient. If the patient responds, maintenance dosage of cortisone may be given at home. The treatment of subacute lupus erythematosus requires experience and judgment; for the general practitioner consultation with a dermatologist is advisable and advice should be sought if puzzling symptoms arise.

Acute or protracted systemic lupus erythematosus should be treated only in the hospital. Expert handling is essential. It is impossible to outline the treatment. Each patient requires all of the ingenuity that men experienced in the care possess. Team work is often necessary depending upon which organs are most involved. Mental symptoms must be watched for a psychiatric consultation often is needed.

Antibiotics and steroids are usually used. Nutritional aids and general nursing are imperative. The treatment is protracted, tedious, and expen-

(Continued on Page 1067)

RED SORE EYE EMERGENCY CARE

MALCOLM A. MC CANNEL, M.D.
Minneapolis, Minnesota

BLINDNESS at any age has no peer as a problem in economic, social and personal adjustment for the person involved. One of the most annoying, exasperating, and potentially worrisome clinical entities is the red, sore eye.

The family physician is the one person the patient usually turns to when he needs emergency care for his eyes. A routine management program to follow in the care of these emergency eye cases may be of help to you as personal family practitioners.

Initial Examination and Evaluation Procedure

When the patient presents himself in your office with a red, sore, or injured eye, include vision taking as part of your routine preliminary history and examination.

A reversed lettered vision taking chart is easily obtainable, and this can be tacked to the wall behind the examining chair. If a mirror is then placed on the opposite wall ten to eleven feet away, you have achieved a twenty-foot vision lane by having the patient look into the mirror at the card posted behind his head. The examiner can then cover one of the patient's eyes with one hand and emphasize with his other hand the different lines he wishes to have the patient read. Occasionally it is at first impossible to get a good vision following an injury to the eye because of the attendant excitement, photophobia, and blepharospasm present.

After you have removed the gross dirt and cleaned the eyelids gently with cotton and saline, instill a liquid anesthetic in both eyes, such as pontocaine .5 per cent. The subsequent examination is much easier. All manipulations around the eyes are done with greater ease if the patient is instructed to keep both eyes open.

Remember that it is very difficult to explain to a patient after you have treated him for a corneal infection that the reduced vision he has in that eye is not due to a slight nebulous opacity left by the healing ulcer, but rather to a long-standing amblyopia. This is because any impairment of sight which the patient was not aware of prior to the removal of the foreign body, may be attributed to the removal procedure, especially if the foreign body was so deeply embedded in the cornea as to necessitate currettment.

I aided in the eye examinations for a time at the Ft. Snelling Induction Center early in the war, and I was amazed at the number of Minnesota farm boys, who did not realize they had poor vision in their left eye. Evidently as long as their rabbit shooting eye served them well, they had never checked on the left eye by closing their right, to realize there was an amblyopia in this left eye.

If the patient's glasses have been broken by the injury, holding a pin-hole disk or an ordinary card with a pin-hole in it in front of the eye will determine whether that eye is correctable in the absence of a corrective lens.

In evaluating the disability, it is important to check whether you feel the lesion is superficial or penetrating. Is the lesion such that the vision of the eye is at stake? What about the later complications to this injured eye? At this point in the examination you are at a cross-roads. You will either undertake the treatment and management yourself, or you will seek consultation with an oculist.

In general, the remainder of the paper will be tips on the management of such red, sore eyes as handled by the families' personal physician.

Foreign Bodies, Abrasions, and Contusions

The commonest injuries that give a red, sore eye are foreign bodies, abrasions, and contusions.

Foreign objects that affect the eye fall loosely into four categories: windborne particles, abrasions from an object (large or small), contusions, and flying splinter chips.

To adequately detect most foreign bodies, one needs good illumination and adequate magnification. A forty watt bulb on a conventional gooseneck is placed to one side in front of the patient. A small condensing lens of fifteen diopters held three inches in front of the patient's eye will give bright focal illumination. Direct the light in from the side.

Read at the Centennial Meeting of the Minnesota State Medical Association, Saint Paul, Minnesota, May 20, 1953.

A Beebe binocular loupe, which goes on over your glasses, is excellent for giving two and one-half times magnification of the field. A treatment chair with an adjustable head support helps immeasurably to hold firm and still the bobbing, weaving patient's head.

The windborne foreign body that is seen floating in the conjunctival cul-de-sac is easily removed. If it is lying loose, I use a well-wetted cotton pledget on a toothpick, and by brushing across it very gently, the object often becomes embedded in the matrix of the cotton and can be removed. If the foreign body is impacted on the cornea, be very gentle in crossing the cornea since epithelium can be removed.

Learn to be delicate in pulling on the lids. A soft touch minimizes blepharospasm and jerking, and instils patient-doctor confidence. The lower lid and fornix can best be seen by having the patient look up and outward and by gently stroking outward from the nose with the thumb, everting the lid by continuous pressure.

If the eye is quite irritable looking, but no foreign body can be found, look closely at the cornea and if several vertical linear abrasions can be seen, the foreign body is usually under the upper lid. They can often be missed when they are on the little shelf or sulcus on the inner surface of the upper lid a millimeter from the lid margin.

If you can remember three points, the inspection of the upper lid can be a very simple matter. Always have the patient look down with both eyes open. Grasp the lid gently by the eyelashes and pull it slightly away from the eyeball to eliminate the surface cohesion of lid and cornea. Then localized downward pressure should be applied just above the upper margin of the tarsus, using your finger tip, cotton applicator, or a match stick. One-half per cent pontocaine just before will make the patient more relaxed.

Glass wool used in decorating Christmas trees and fiber glass insulating materials are often almost invisible and can be found in the upper cul-de-sac causing considerable irritation.

During harvest season and with grain handlers, transparent grain husks are almost invisible unless viewed with oblique illumination.

The puncta and canaliculus can form a perfect scabbard for the sword-like colorless eyelash, giving marked symptoms of a foreign body that cannot be found. Cilia are also occasionally in meibomian gland ducts.

Speaking of meibomian glands, it does not take much of a chalazion to cause considerable redness and extreme discomfort in the early stages of inflammation. Pontocaine plus a little lid pressure with a glass rod and finger tip can start drainage through normal gland opening and abort a full-blown cystic chalazion from developing.

Another little-mentioned clinical problem that I feel should get more emphasis is conjunctivolithiasis, or calcium salt concretions of the meibomian glands. These are seen as pin-point or larger yellowish deposits on the palpebral surface. If these project above the surface of the conjunctiva they cause a constant scratchy sensation of the eye. The patient gets immediate relief after their removal with the point of a cataract knife or small discission needle after pontocaine anesthesia.

Foreign body eye spuds come in many shapes and sizes. One that works, probably better than any, is found right in your own doctor's bag. I am referring to an ordinary syringe with its hypodermic needle, which is sterile, available, and efficacious.

In using an eye spud or the hypodermic needle on a syringe, bring the point in from the side while having the patient fix on a distant object. Tell him to keep both eyes open. The point should be held parallel to the surface to minimize the danger of having the eye jabbed if the patient moves too quickly.

If the foreign body is a metallic fragment and has been in longer than twenty-four hours, it is usually easy to remove the large segment, but this often leaves a considerable rust ring behind. If the rust fragments are difficult to remove, take a toothpick and wind cotton very tightly on the tip. After moistening the sharpened end with 1 per cent silver nitrate, apply it to this remaining rust ring and it will be removed easily after occlusion for twenty-four hours.

If an intra-corneal foreign body does not look quite clear or remove easily, think of an iris freckle, or a keratitic precipitate on the posterior endothelium of the cornea.

After blasts and explosions, many fine particles may be ground into the cornea. It may be necessary in removing these to remove all the corneal epithelium on the cornea.

If the foreign matter is chemically irritating, it is very important to meticulously remove all the particles, even at the expense of some damage to this corneal stroma.

If using fluorescein, utilize the technique wherein a fraction of a drop is held by surface tension on the tip of a toothpick. This is touched to the everted lower lid on its inner surface providing ample dye for the purpose. A full drop is too much and requires dilution with irrigating fluid in order to detect minute abrasions on the corneal surface. The washing is time consuming and stains the fingers. It has been said that a one-ounce bottle of fluorescein will last a busy practitioner almost a lifetime.

Argon lamps, available for under two dollars, make the light green dye fluoresce with a startling brightness in a darkened room.

If the eye has a perilimbal congestion or ciliary flush, then homatropine or possibly even atropine ointment is indicated because there is often an associated iritis. However, do not use it routinely as atropine gives annoying cycloplegic symptoms long after the foreign body irritation has been removed.

Don't be talked out of an eye pad after a corneal abrasion. There are always plenty of reasons for not having it on, but the rationale of putting the eye at rest speaks much louder.

Sodium sulfacetimide, neomycin, and bacitracin ointments rarely give allergic reactions and are good antibiotics to use before the eye pad is applied.

Examining Infants and Children

In infants, regular bottle feeding or a nipple filled with a sugar-soaked cotton pledget, plus topical pontocaine, helps in the examination for a foreign body. If too restless, a moistened seconal capsule by rectum (roughly a grain for every ten pounds of body weight), aids. The action is increased if a pin-hole is made in each end of the capsule before insertion. Sedation is optimum in about thirty minutes.

After blanket mummying, allow the child to straddle *your* lap so the nurse can steady his head as you lean over the patient to examine the eyes. Use adequate pontocaine here also to make sure the eye is almost "asleep" prior to your manipulations.

If you feel that a general anesthetic is contraindicated in a youngster with an upper respiratory infection, who has an intracorneal foreign body, and if consultation is not immediately available, put an antibiotic ointment with a little atropine in the eye and apply a bandage. The foreign body often sloughs out in a few days.

I should like to add that a good dictum is to be honest with a child, especially in the older ones, as a little explanation prior to manipulation usually secures much better cooperation than in most adults.

Abrasions

Abrasions of the eye usually heal quickly even though the conjunctiva may show a hemorrhage that appears more serious than it is. If the cornea has been abraded, however, it can be quite painful because of the exposed area of denudation. In these cases an ointment or collyrium with an anesthetic added will give a great deal of comfort. However, corneal regeneration is delayed to a certain extent by using a topical anesthetic.

A very common abrasion is that seen in young mothers, who wear glasses. An infant is attracted by the glare from the metallic trim on her glasses and, in clutching for them, often scrapes the front of the eye with his tiny finger nail. If this same finger nail has been crawling about the floor, there is a good chance that mother will have several organisms in her eye. These cases require an antibiotic and a very tight bandage—preferably with elastoplast. To save yourself a 3 a.m. call, give her one-half dozen aspirin and codeine tablets as she leaves the office.

In any abrasion case, when the epithelium on the cornea has been disturbed and a patient's threshold to pain seems low, provide a small tube of anesthetic ointment such as butyn-metaphen, or holocaine-epinephrine, with instructions to apply it in the eye if the pain becomes severe and then reapply the bandage tightly.

In that occasional patient with nystagmus, use pontocaine in the regular manner and then steady the eye by pressure through the eyelid with your finger tips.

In a red, sore eye that does not heal after several days, stain once more with your fluorescein and rule out the possibility of a faint-staining, branching, dendritic ulcer.

Pontocaine is not the anesthetic of choice in this treatment, rather use cocaine since it tends to soften the epithelium.

Use a tincture of concentrated iodine paint on a tightly wrapped cotton applicator and scrub off the corneal epithelium that contains the dendritic ulcer. Neutralize with cocaine 4 per cent and then bandage the eye for forty-eight hours with a very tight elastoplast bandage.

If the foreign body is known to be magnetic and has penetrated the cornea, but cannot be removed easily with a spud or a fine-pointed forceps, the foreign body can often be removed with an electromagnet. I recommend this only with intracorneal foreign bodies.

I deplore the tendency to buy a war-surplus electromagnet for twenty dollars to keep in your office as a diagnostic instrument. If a foreign body is thought to be intraocular, *always localize first*. Great harm can be done by applying the magnet to the eye and then asking the patient for his sensation of a pull or drag in the eye.

Contusions

Do not be overly casual with the patient who presents himself with a mouse or garden variety black eye. This injury can mask a scleral rupture, or hemorrhage into the vitreous, a dislocated lens, retinal detachment, or actual orbital fracture.

If the periorbital tissues are quite puffy and swollen, check very carefully to rule out an orbital rim fracture, for if allowed to go untreated, the patient may have an inferior oblique muscle imbalance on this side plus a facial asymmetry.

If more serious damage has been excluded, cold compresses for the first forty-eight hours to reduce the swelling and stop the hemorrhage are indicated.

After the first twenty-four hours, heat in the form of an electric lamp, hot water bottle, electric pad, or even hot compresses of boric acid (using one tablespoon of boric acid crystals to a pint of water) will speed the absorption of the blood in the ocular tissues. Use cold cream or petrolatum to protect the skin before applying hot or cold compresses.

A contusion to the anterior portion of the eye can result in lesions to the posterior pole of the eye because of a contrecoup effect. Good vision is still compatible with such an injury if the choroidal tear is to one side of the macula itself. You'll be proud you own an ophthalmoscope when you use it to catch one of these retinal lesions.

A contusion of the cornea may be so great as to fill the anterior chamber with blood. The deeper structures can then not be examined. Get this person off his feet and watch his eyes very closely for secondary glaucoma. I advise no medication such as atropine at this early stage.

Hyphemia is very serious, especially if another subsequent hemorrhage occurs. This results in secondary glaucoma and blood staining of the cornea which prevents ultimate good vision.

Increased pressure in the eye can be checked with a little practice in palpating the eyes. The normal eye tension should feel about the same as the tip of one's nose. It is too soft if it feels like the philtrum below the nose, and glaucoma is present if it is as hard as the glabella above the bridge of the nose.

Treatment of Eye Burns: Thermal, Chemical and Radiation

In chemical burns of the eye, quickness of action, implicity of treatment, and a practical outlook should characterize the treatment. Do not waste important moments searching for antidote charts or for the right neutralizing agent for an acid or alkaline burn. Rather spend the time more profitably in using immediate and thorough irrigation of the eye with plain tap water. Ideally, it could be warmed slightly and sterile. More practically, it could be irrigation with a rubber ear syringe, or putting the head under a faucet, or even immersing the head in a bucket of water and instructing the patient to blink his eyes as he ducks under.

A good set-up in a general practitioner's office would be a large open mouthed bottle on a shelf above the treatment chair, filled with physiologic saline pre-heated to room temperature. This can be stoppered so that a syphon tube, with a soft rubber tip, at the distance of three feet gives the proper pressure.

I advise irrigating from five to ten minutes when you have an ordinary irritant in the eye such as carbon-tetrachloride, battery acid, cleaning solvents, or insect sprays. I would suggest a full thirty minutes if the chemical is an unknown or doubtful one. Also the severity of the exposure would indicate more irrigation.

The constant irrigation used to remove a foreign material converts the chemical burn into a mechanical loss of epithelium. Such irrigations in a chemically burned eye are necessary even at the expense of treating eyes that could possibly have been left alone.

Delay in early meticulous care may cause too much damage and allows intense swelling of the lids that prevents adequate inspection and treatment at a later moment.

Alkaline burns are more devastating than acid burns. Acid burns are essentially non-progressive. Alkalis form soluble basic proteinates and these penetrate deeper into the corneal stroma.

Lime burns result when slaked or unslaked lime particles have been thrown or blown into the eyes as when children play around construction work. Be careful to swab away any lime particles in addition to irrigation, since the particles can act for hours and produce deep necrotic burns.

Ordinary eversion of the lid and then double eversion of the upper lid again is used in searching the cul-de-sac for particles. Ordinarily the lids would be held open manually for irrigation following topical pontocaine, but if there is too much blepharospasm even after local anesthesia, a lid retractor is a very useful aid.

With the exception of Bal, for lewisite and arsenical burns, and 1 per cent acetic acid in alkali burns such as sodium hydroxide (lye), special irrigating treatments advocated in medical literature have not been shown to give superior results to copious saline irrigation.

The degree of ultimate disability depends, of course, on the integrity of the cornea and the post-traumatic clearness of this cornea. Any conjunctival adhesions, or symblepharon, while disabling, do not produce blindness.

In a recent study, it was found that only twelve per cent of all patients with burns of the upper face showed actual burn of the eyeball itself. This attests to the marvelous protective mechanism of the eyelids.

When there is involvement of two opposing mucous membranes, adhesions will almost certainly form unless certain precautions are taken. If it is not too severe, encourage the patient to roll his eyes around in all directions several times daily. Daily passage of a glass rod deep into the fornices of the eye after the use of pontocaine anesthesia, tends to prevent these adhesions.

A short word about the actinic conjunctivitis, or red eye from sun lamps, snow brightness exposure, or high altitude glare. This type of ultraviolet radiation gives symptoms of a foreign body in the eye six to eight hours after the exposure. It also follows improperly shielded sterilization lamps, such as used in some commodes, in operating rooms, and in dish-washing sterilizers. The best treatment, of course, is to avoid the agent which caused the reaction, give a liquid anesthetic, and soothing cold packs to the eyes until the congestion subsides. Dark tinted lenses are a great comfort and prevent subsequent radiation burns.

Lacerations, Penetrations, and Perforations

Following any laceration, especially with agricultural people, which extends into the eyeball, it is wise to use a booster dose of tetanus toxoid if the patient has been previously immunized, or prophylactic tetanus antitoxin, not so much for its specific prophylactic benefit as for its foreign protein to produce antibodies and whip up a bodily reaction to resist invasion.

If the eye looks badly damaged, do not attempt to remove what appears to be a foreign body or blood clot. Manipulation of a prolapsed iris may cause extreme pain with its attendant squeezing and cause irreparable damage. If the damage seems quite severe, bandage *both* eyes to immobilize the injured eye and prevent herniation of ocular contents. Move the patient by stretcher or at least keep movement and strain at a minimum.

In washing eyelid wounds, clean with saline. Debridement is usually unnecessary because of the excellent blood supply of the lids. I have seen a patient in whom a peculiar slicing injury of the lower lid shaved off all the hair follicles on a thin strip of skin with the roots of the lashes showing through the under side; a perfect take followed the suture back in place of the strip of skin.

If in a lid laceration, a tear duct canaliculus is severed, primary repair of this is indicated before the lid itself is repaired. Function can be returned to severed canaliculus ducts by approximating them over a silk suture passed through the duct.

Remember that in eyelid injuries there are two main anatomic entities: the skin orbicularis, and the tarsal conjunctiva.

In lid repair, each should be approximated carefully one to the other to prevent disfiguring notching and a later retraction.

If the cornea is lacerated do not use ophthalmic ointments. Too often ointment droplets become anterior chamber foreign bodies complicating the original injury.

In flying splinter injury cases, instruct the relatives to bring samples of the metal involved during the injury for testing with a magnet. Stainless steel is non-magnetic unless it has been rolled or roughly handled by chipping or pounding.

If progressive loss of vision occurs after a minor eye irritation in a farmer who does his own plowshare chipping and grinding, think of an intralenticular foreign body with resultant progressive cataract. Remember that a fast-moving particle penetrating the eye from a grinding wheel does not need to cause discomfort.

Farmers, who do their own tractor repairing and mechanical work, are often not aware of the importance of wearing goggles and are good candidates for these silent intraocular foreign bodies. Fortunately, conjunctival lacerations heal very rapidly even though they look very extensive and have caused considerable hemorrhage. Be sure, however, that they do not mask a more serious bulbar problem.

Sympathetic ophthalmia is a respected entity, but not the feared condition demanding immediate enucleation as formerly thought. One has ten days to two weeks to make up his mind before he enucleates.

Cortisone aids greatly in quieting down these irritated, injured eyes.

I should like to add that following your initial treatment and bandaging of the eyes if necessary, take time to complete the details on your history card as to type of treatment, kind of work the patient was doing, tools he was using, and the prognosis of the case as you evaluated it in the first stage.

Again let me make a plea for testing the vision prior to treatment. Litigation on ocular disability following injuries can be quite a thorny matter.

Traumatic Conjunctivitis

A last word about traumatic conjunctivitis, or ordinary infectious pinkeye, which is often preceded by a history of a foreign body in the eye.

Because of the scratchy, irritable, inflamed feeling, the patient will often feel that a foreign body is present. There will be considerable secretion, invariably morning agglutination and often some photophobia; the redness is usually limited to the lids, that is, the palpebral conjunctiva and the bulbar conjunctiva, rather than perilimbal or circumcorneal portions of the eye. The most important treatment in this infectious red eye is to use many, many dry wipes—not the patient's dirty handkerchief, but kleenex or cotton balls that can be discarded. Use a liquid antibiotic, such as sodium sulfacetimide, 30 per cent. A similar ointment can be used three or four times daily. The dry wipes are most important. I speak with some feeling because this problem was studied by me in the Service.

In my series over 500 cases of conjunctivitis were studied by smear and culture. The common organisms were not the oft-quoted rare ones in the text books, but our old friends staphylococcus and streptococcus.

The dry wipe is most effective since it keeps the eye opened to air and free from moisture. Organisms like a hot, wet, dark place to multiply.

Dark glasses give quite a bit of relief from irritating light. It is true, however, that we, who see many of these cases, are finding more and more resistant strains of staphylococci and streptococci as the causative organisms and the usual simple methods of treatment no longer seem as adequate.

Conclusion

In closing, I would like to emphasize five points:

Beware of the pitfall of a too evident diagnosis. The most prominent symptoms may serve to divert your attention from more important signs of the disease of the eye.

The initial record you have of the patient's vision and the patient's version of an eye accident is far more valid than the later compensation-minded interpretation of the same event.

Immediate and copious tapwater irrigation is the most efficacious treatment for chemical burns of the eye. Advise it by phone if necessary.

If you are in doubt about the magnitude of any seemingly severe eye injury, bandage both eyes while waiting for consultation. This puts the eyes completely at rest and also induces patient immobilization because of the limitation of vision.

Remember there is no late ophthalmic treatment, no matter how deft and excellent, that can equal immediate optimum therapy.

QUINIDINE INTOXICATION OCCURRING DURING THERAPY OF AURICULAR ARRHYTHMIAS

REUBEN BERMAN, M.D., CHARLES M. SADOFF, M.D.,
and GEORGE B. GORDON, M.D.
Minneapolis, Minnesota

THE MEDICAL history of quinidine goes back to the latter half of the nineteenth century when it was used as an antipyretic and antimalarial drug.[13] In 1914 Wenckebach[16] reported successful conversion of auricular fibrillation with quinine. Frey[6] then investigated the cardiac action of various other cinchona products and in 1918, reported the regulation of eleven cases out of twenty-two auricular fibrillators with the use of quinidine. This drug was introduced to American medicine in 1921 independently by Levy[11] and Eyster and Fahr.[5] Many papers have appeared since, describing successful regulation of auricular fibrillation in forty to ninety per cent of the treated cases.[9,10,12,15,18,19] Quinidine has also been used less extensively for the regulation of other arrhythmias, especially auricular flutter and ventricular tachycardia.[7]

There are few follow-up studies concerning the fate of the regulated fibrillators. Harris[9] followed twenty-six regulated cases of auricular fibrillation out of an original group of forty-three and found that 35 per cent of these reverted to fibrillation in one month, 65 per cent in one year and at the end of two years only 20 per cent remained regulated. In Weisman's series,[15] 17 per cent remained regular five years or more.

The dangers of quinidine have been recognized since its use as an antipyretic drug in the nineteenth century. Amongst the side effects noted are fever, fall in blood pressure, nausea and vomiting, diarrhea and thrombocytopenia. However, the chief hazards of quinidine have long been considered to be arterial embolization, ventricular tachycardia, ventricular fibrillation, and respiratory failure. Deaths coincident with the administration of quinidine have been reported since its earliest use. Berman and Blumenthal[1] report six deaths in 100 cases of auricular fibrillation treated with quinidine. Smith and Boland[14] report three sudden deaths in forty-one cases, a mortality of 7.4 per cent. However, the advantages of quinidine have been much more widely publicized than the dangers. The mishaps associated with therapy with this drug in heart disease are not always appreciated.[4] It is the purpose of this paper, therefore, to report five well-observed cases of complications arising in the course of quinidine therapy for auricular arrhythmia, with two deaths and two autopsies.

Case Reports

Case 1.—C. H., a thirty-year-old white woman, was admitted to the University of Minnesota Hospital for the second time March 4, 1952, and discharged March 13, 1952. Her first admission was in December of 1951, when she entered with the complaints of cough of two years' duration and frequent hemoptyses raising as much as one cup of blood. She had had rheumatic fever at the age of twenty-four and knew of a murmur since then. She was able to continue her occupation as a waitress until a few days before her first admission. She had been taking digitoxin consistently since the fall of 1950.

The essential features of the 1951 examination revealed the heart of normal size, faint apical systolic murmur with a grade II rumbling mid-diastolic murmur at the apex. Her blood pressure was 94/60; pulse 76 and regular. The lungs were clear. There was no liver enlargement or edema. Electrocardiogram showed a regular rhythm, a high-notched P_2 and P_3, a right axis deviation with a vertical heart, a late R wave in V_1 interpreted as a right strain pattern. A chest x-ray plate demonstrated enlargement of the left atrium and slight prominence of the pulmonary artery. Cardiac catheterization showed a pulmonary mean pressure of 35 mm. of mercury. Commissurotomy was successfully performed December 13, 1951. Following this procedure, auricular fibrillation occurred and the cardiac rate was continuously controlled with digitoxin. Marked objective improvement resulted.

On the second admission, March 4, 1952, the chief change was the finding of auricular fibrillation. It was decided to regulate the fibrillation with quinidine. On March 10, 1952, quinidine 0.4 Gm. was given every four hours for four doses, a total of 1.6 Gm. On March 11, 1952, quinidine 0.4 Gm. was given at 8 a.m., 10 a.m., 12 noon and 2 p.m., a total of 1.6 Gm. At 3:30 p.m. on March 11, 1952, the patient complained of dizziness and slight nausea. She had no other complaints. At that

---

From the University of Minnesota Department of Medicine and from the Medical Service, Veterans Administration Hospital, Minneapolis, Minnesota.

Reviewed by the Veterans Administration and published with the approval of the Chief Medical Director. The statements and conclusions of the authors are the result of their own study and do not necessarily reflect the opinion or policy of the Veterans Administration.

Read before the Minnesota Society of Internal Medicine, Minneapolis, Minnesota, May 23, 1953.

time a bizarre arrhythmia with runs of ventricular tachycardia was discovered (Fig. 1) and the quinidine was discontinued. She recovered uneventfully.

Summary—Case 1.—This is a case of a young woman suffering from mitral stenosis in whom auricular fibrillation followed mitral commissurotomy. Attempt at conversion with quinidine resulted in short runs of ventricular tachycardia which have never been observed before or since.

Case 2.—A. B., an eighteen-year-old girl, was admitted to the University of Minnesota Hospital July 23, 1952 and discharged August 5, 1952. The patient had an attack of rheumatic fever at the age of twelve with severe joint involvement requiring six months of bed rest. She knew of her heart murmur since this illness and her activities had been moderately limited since then. Severe dyspnea first appeared in April, 1952, when she was first told she had an irregular heart beat. In June of 1952, edema and ascites appeared. She was digitalized and fed a salt-free diet with loss of the edema.

On admission her temperature was 98; pulse, 100 and totally irregular. Her blood pressure was 110/70. The heart was enlarged to the anterior axillary line. A low-pitched rumbling diastolic murmur was apparent at the heart apex with a loud systolic murmur also. A systolic thrill was palpable at the apex. P_2 was greater than A_2. The lungs were clear; the abdomen negative. The extremities showed no edema. Blood culture was sterile. Roentgenogram showed great enlargement of the heart with enlargement of all chambers. The left border of the heart approached the lateral chest wall. Electrocardiogram showed a delayed R wave in V_1 with a right axis deviation and auricular fibrillation (Fig. 2). Digitoxin was continued at 0.2 mg. daily. Quinidine therapy was instituted July 30, 1952; 0.2 Gm. was given every two hours for five doses for a total of 1 Gm. on that day with no effect. On July 31, 1952, 0.4 Gm. was given every two hours for five doses for a total of 2.0 Gm. without effect. On August 1, 1952, 0.6 Gm. was given at 6:00 a.m. Shortly after this dose the patient became nauseated and quinidine was discontinued. At noon she felt well and went to a movie shown at the hospital. At about 2:30 p.m. she collapsed, and fell from her chair to the floor, apparently dead. She was pulseless and no respiratory movements were seen. Artificial respiration was given for a period of two minutes following which feeble respiratory movements occurred. Rapid recovery followed. An electrocardiogram (Fig. 2) taken approximately fifteen minutes later showed prolonged runs of irregularity with ventricular complexes arising from many foci. Following this incident she returned to her usual form of auricular fibrillation. There were no residual effects.

Summary and Comment—Case 2.—An eighteen-year-old girl with severe mitral stenosis and mitral insufficiency with a greatly enlarged heart was subjected to attempted quinidinization for regulation of auricular fibrillation. Severe nausea led to withdrawal of the medication. Eight and a half hours after the last dose, she collapsed with apparent cardiac and respiratory failure. She revived following artificial respiration. Gordon, Matton and S. A. Levine,[8] in 1925, found in cats that quinidine intravenously would kill by respiratory paralysis. Artificial respiration usually resulted in recovery. Artificial respiration was probably a life-saving measure in *Case 2.* The electrocardiogram revealed a profusion of beats of ventricular origin.

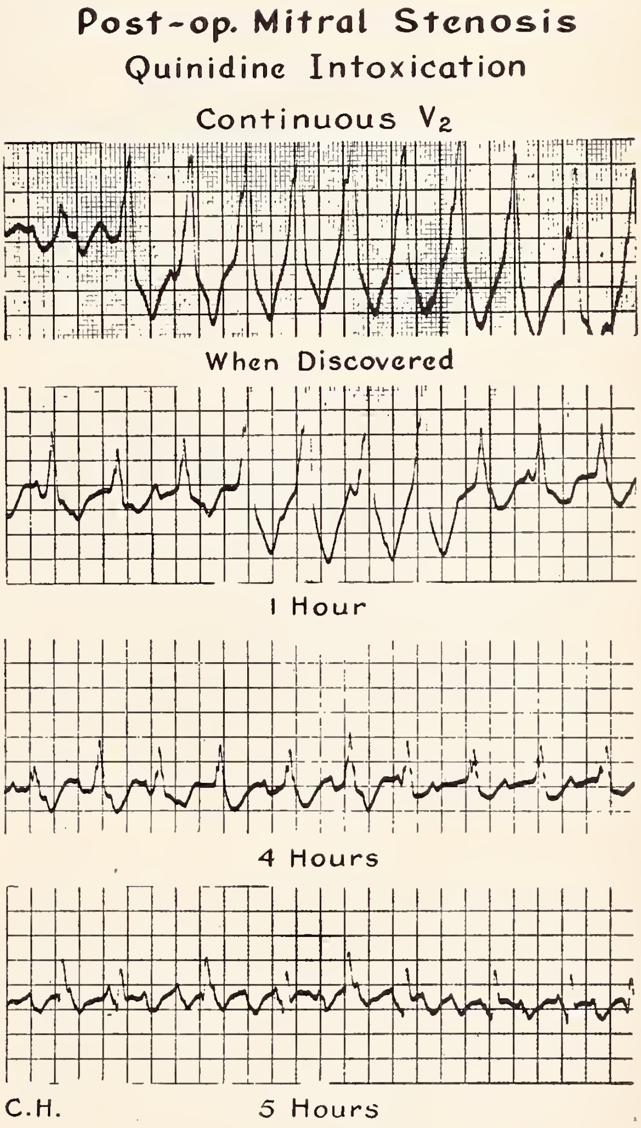


Fig. 1. Electrocardiogram in *Case 1,* March 11, 1952: described in the text.

Case 3.—O. A., a sixty-one-year-old white man, entered the Minneapolis Veterans Hospital for the third and final admission March 29, 1952, died April 21, 1952. He was first admitted April 28, 1949. His symptoms were dyspnea on exertion for one month, paroxysmal nocturnal dyspnea for one week, and edema of the feet and ankles for three days. He denied angina pectoris. Absence of breath sounds was noted at the base of the left lung posteriorly and moist râles were audible at the right base. The apex of the heart was found in the sixth interspace 10 cm. to the left of the midsternal line. The heart rate was totally irregular at 150 per minute. No murmurs were heard. His blood pressure was 130/80. The abdominal examination was negative. There was edema of the feet and ankles. A chest x-ray showed a moderately enlarged heart and bilateral pleural effusion. His vital capacity was 4,300 cc. His circulation time was 45 seconds arm to tongue with decholin; venous pressure 13.5 cm. of water. The patient was digitalized with digotoxin, fed a low sodium diet, and given mercurial diuretics. He responded well to the treatment. Following digitalization he converted to a normal sinus rhythm. The heart decreased to normal size.

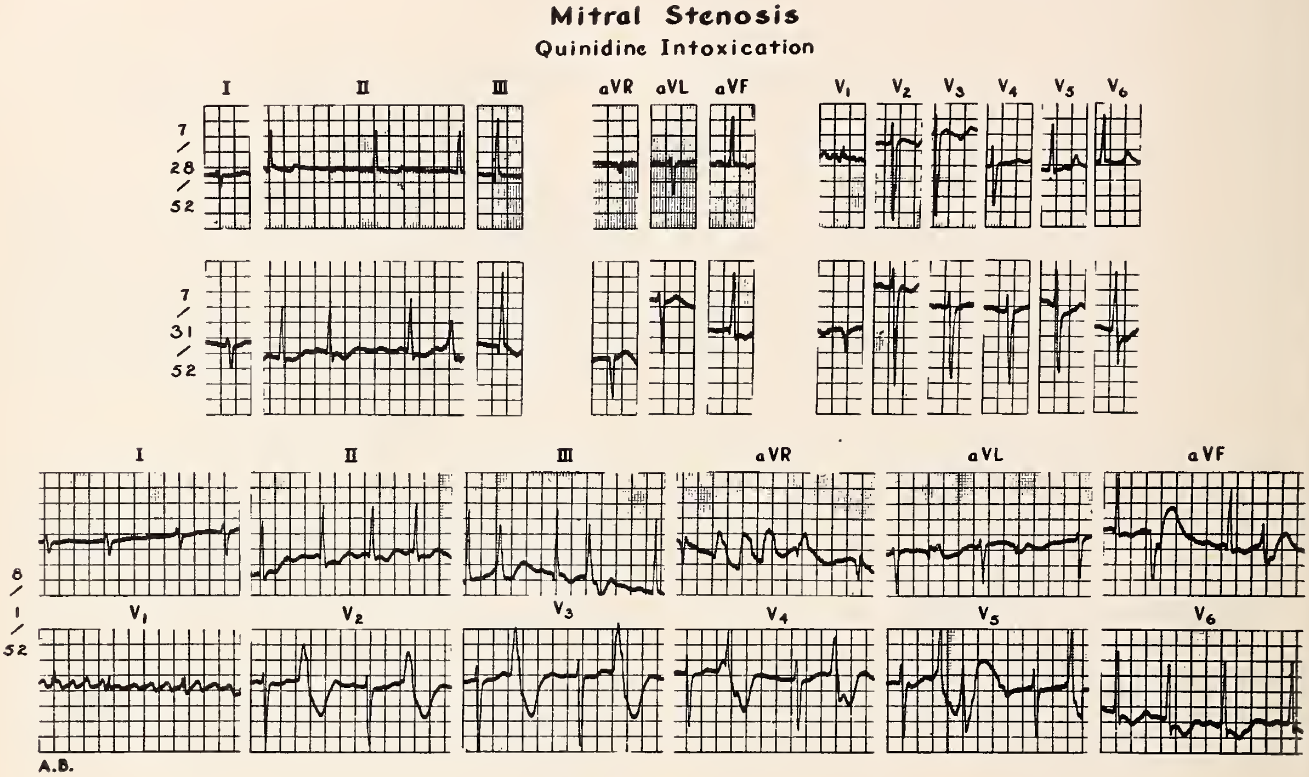


Fig. 2. Electrocardiograms in *Case 2.* July 28, 1952: digitalized prior to quinidinization. July 31, 1952: during quinidine therapy. August 1, 1952: tracing taken immediately after quinidine shock. Note burst of tachycardia with wide QRS in aVR.

The patient was readmitted on October 26, 1950, again in frank congestive heart failure with auricular fibrillation and essentially the same findings as on the previous admission. The patient had discontinued the digitoxin one month prior to admission. It was decided that a trial of quinidine would be in order. Thus following digitalization, the patient was given 1.2 Gm. of quinidine sulfate after which he converted to a normal sinus rhythm. The digitoxin was discontinued and the patient was maintained on 0.2 Gm. quinidine four times a day. He was discharged with instructions to take this medication indefinitely.

The patient was admitted for the third and final time on March 28, 1952, presenting the same clinical picture as before with congestive heart failure and auricular fibrillation. He had discontinued the quinidine therapy four months prior to admission. The staff at this time felt that the bouts of congestive heart failure were precipitated by the onset of rapid auricular fibrillation. Again following treatment of the heart failure with digitoxin and mercurial diuretics the patient was started on quinidine. On the first day of therapy March 31, 1952, he received 0.2 Gm. every two hours for a total of one gram which did not convert the rhythm. On April 1, he had 0.4 Gm. of quinidine every two hours for five doses. On April 2, he received 0.4 Gm. of quinidine at 9 a.m. and 12 noon. Then regular rhythm was discovered and the quinidine was discontinued. After eating his usual noon meal he had two short tonic convulsions. Following this a neurological examination revealed only a generalized hyperreflexia. Approximately forty-five minutes later the patient had a grand mal type of seizure and became intensely cyanotic. His pulse and blood pressure were imperceptible. He was given artificial respiration for five minutes without any change in his condition. The thorax was opened.

It was observed that the heart was not beating. After electrical stimulation the heart began to contract in a regular and efficient fashion. Thereafter the blood pressure rose to normal levels quickly and the pulse became palpable. The patient was taken to the operating room and the wound closed. He failed to regain consciousness. The cardiac rhythm varied with auricular fibrillation occurring after the operation yielding to an auricular tachycardia (or flutter) with a 4:1 block. Terminally, a sinus mechanism was restored. The electrocardiograms are illustrated in Figure 3. Death occurred April 21, 1952, nineteen days after regulation of the auricular fibrillation.

Quinidine Intoxication

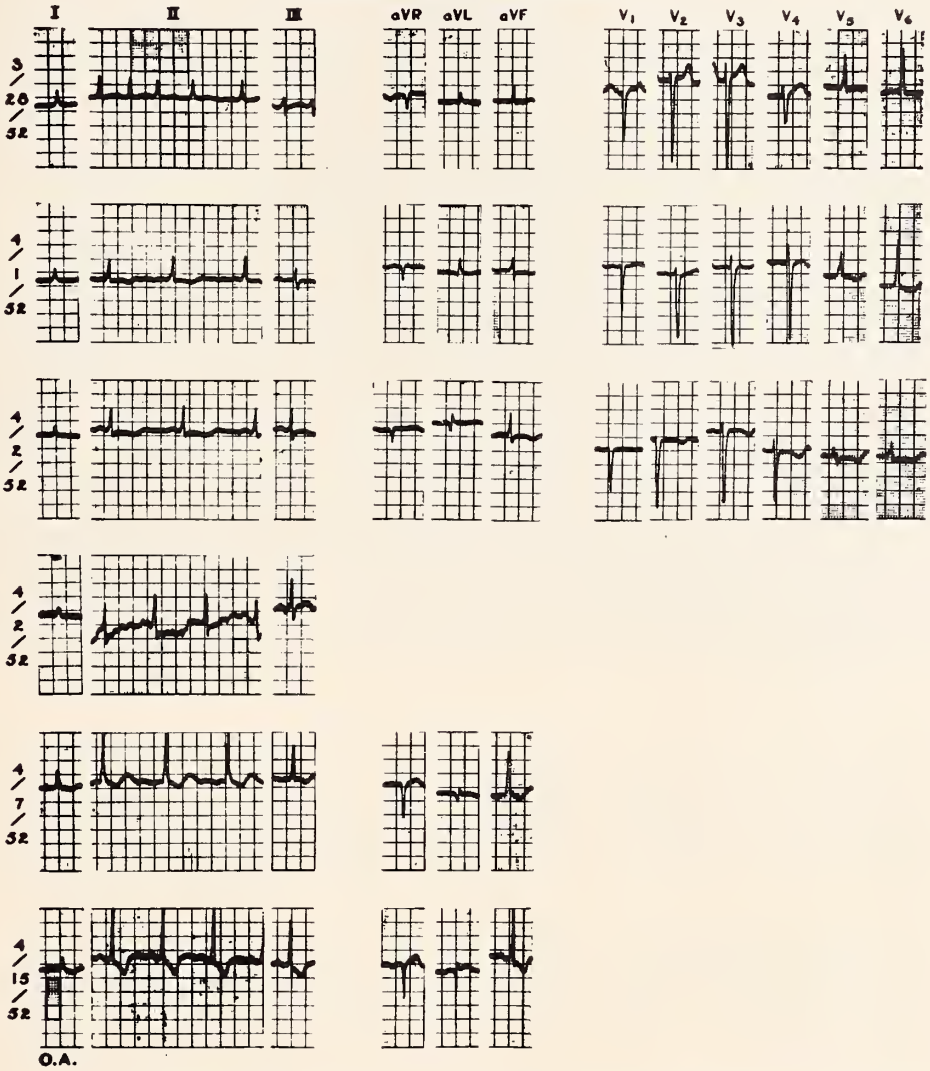


Fig. 3. Electrocardiograms in *Case 3.* March 28, 1952: admission, auricular fibrillation with ventricular rate of 150. April 1, 1952: fibrillation with rate reduced to 70 with digitoxin. April 2, 1952: (a.m. tracing, 12 leads) restoration of sinus rhythm. Note T wave changes in V_1-V_4. April 2, 1952: (p.m. tracing, 3 leads) after cardiac arrest, thoracotomy, manual and electrical stimulation. Auricular fibrillation has recurred. April 7, 1952: during long period of coma; inverted P_2 suggests auricular rhythm. April 15, 1952: restoration of sinus origin of heart beat continuing to death.

Autopsy showed severe bilateral bronchopneumonia. The right lung weighed 690 Gm. and the left 500 Gm. The heart weighed 375 Gms. The coronary arteries were completely patent throughout with only mild sclerotic changes. No clot had formed in any chamber. The valves were normal. The myocardium was grossly normal with the exception of an area of scarring 4x6 cm. at the apex of the left ventricle. Microscopically a moderate diffuse fibrosis of the myocardium was found (Fig. 4). The spleen weighed 100 Gm. and contained an old infarct 1 cm. in diameter. The aorta was free of arteriosclerosis. The brain showed some maceration of the occipital lobes. An elongated area of softness was found medial to the posterior lobe of the left lateral ventricle. The cerebellum and brain stem

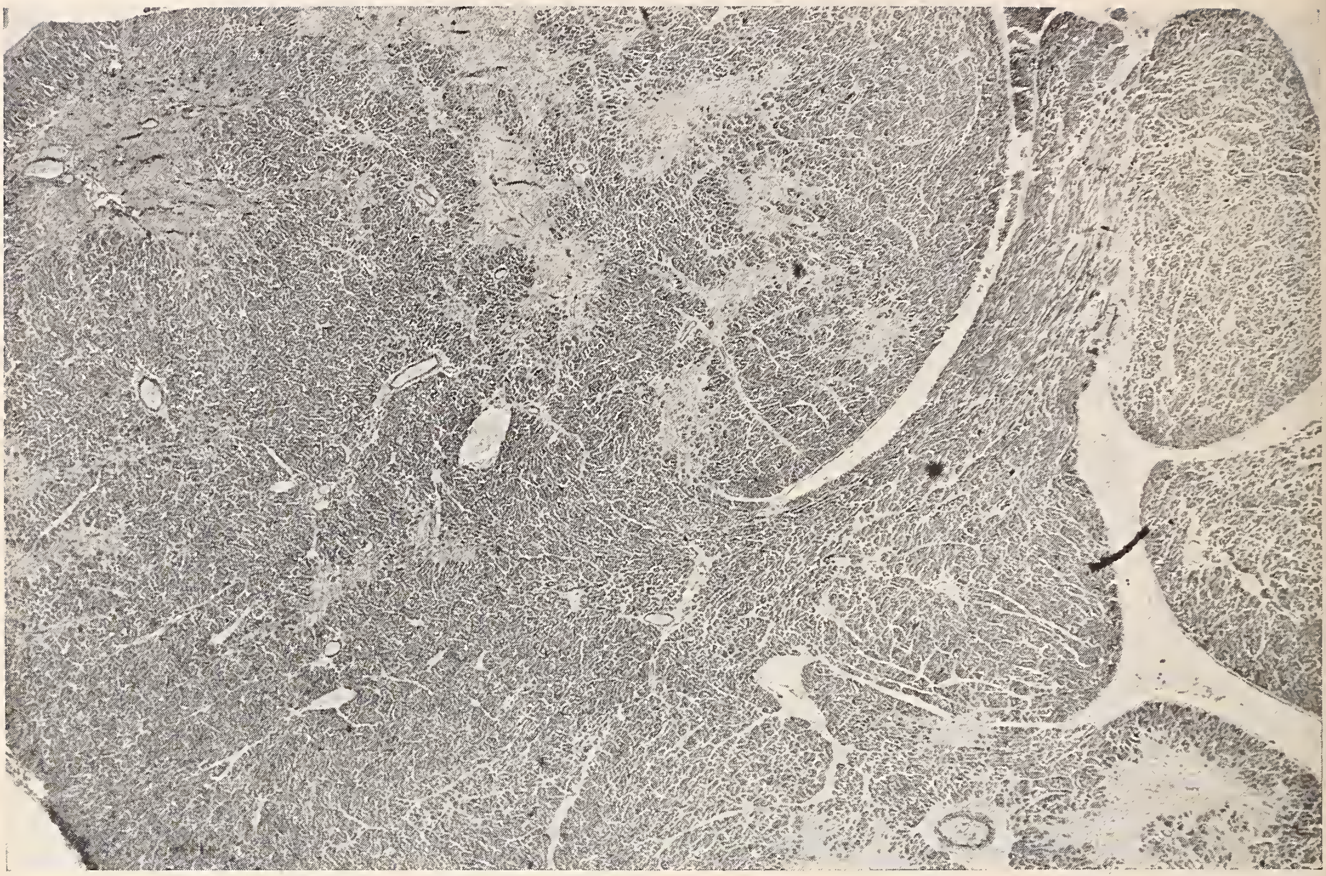


Fig. 4. Cardiac muscle in *Case 3* showing patchy areas of fibrosis (20x).

were normal microscopically and the softening did not appear to be of long duration. The neurones showed no abnormality. The blood vessels showed some increase in thickness of the walls, particularly in the smaller vessels. The pathological diagnoses included:

1. Auricular fibrillation with cardiac arrest.
2. Mild diffuse myocardial fibrosis.
3. Advanced bronchopneumonia.
4. Encephalomalacia.
5. Cerebral arteriosclerosis.

Summary and Comment—Case 3.—The patient had a diffuse myocardial fibrosis without myocardial hypertrophy. Auricular fibrillation was regulated with quinidine. The restoration of sinus rhythm was followed by convulsions and later by cardiac arrest. The patient had two previous attacks of auricular fibrillation, one reverting following digitoxin and the second restored to sinus rhythm with quinidine. This is an example of cardiac arrest following quinidine. This patient illustrates the classic story of death following quinidine under circumstances which without autopsy would have led to the conclusion that restoration of effective atrial beats had dislodged a thrombus and produced fatal cerebral embolization. The autopsy, however, revealed neither atrial thrombus nor cerebral embolus. The cerebral changes can be explained on the basis of the anoxia during the period of cardiac arrest and the subsequent nineteen days of coma.

Case 4.—F. R. L., a sixty-four-year-old white man was admitted to the Minneapolis Veterans Hospital on July 18, 1952, and expired August 9, 1952. His complaints on admission were severe exertional dyspnea and swelling of the ankles for one week. He had first noticed exertional dyspnea about eight years previously. He had been under the care of his local physician since then and apparently had been taking quinidine off and on for several years. He denied any marked dyspnea although he admitted inability to climb stairs without pausing for a rest. He had several episodes of paroxysmal nocturnal dyspnea in the past year. He knew of no hypertension, rheumatic fever, or goiter. He had occasional apical chest pains on over-exertion which were relieved by rest. About six days prior to admission he developed severe dyspnea and his ankles became markedly swollen. On admission his apical pulse was 120, radial, 70; blood pressure, 120/70; and vital capacity, 4.2 liters. The patient appeared to be a well-developed, well-nourished sixty-four-year-old white man in no acute distress. His thyroid was not palpable. His fundi were not remarkable. The lungs were clear to percussion and auscultation. The apical impulse was found in the sixth interspace in the anterior axillary line. There were no murmurs. Femoral pulses were good. The liver was palpable just below the costal margin. There were bilateral inguinal herniae and a left hydrocele. The remainder of the physical examination was essentially negative. The impression on admission was auricular fibrillation and heart failure of unknown etiology.

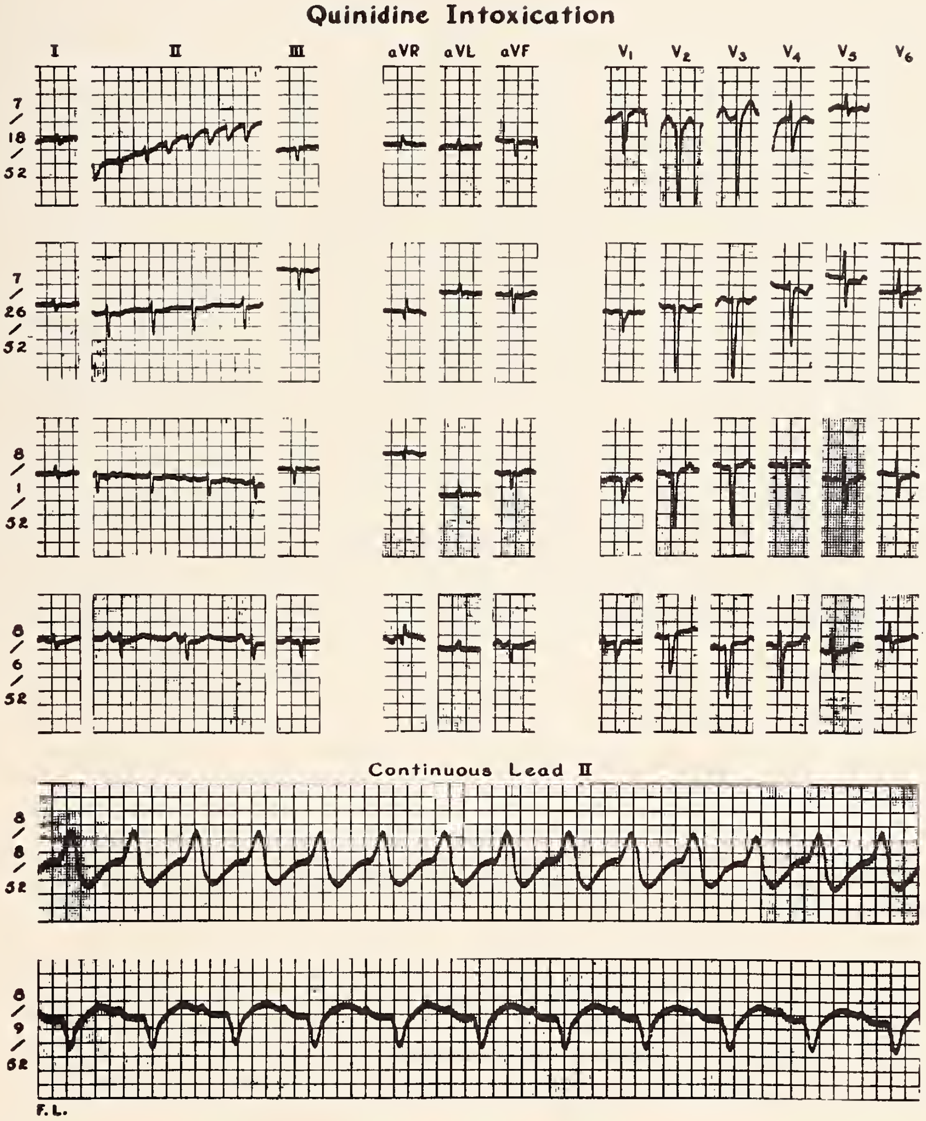


Fig. 5. Electrocardiograms in *Case 4*. July 8, 1952: fast fibrillation on admission. Note burst of ventricular tachycardia in lead II. July 26, 1952: after two days of quinidine. August 1, 1952: after first convulsive seizure; still fibrillating. August 6, 1953: regular rhythm. This was followed in twenty-four hours by second convulsion. August 8, 1953: following third convulsion; ventricular rhythm. August 9, 1953: terminal mechanism; supraventricular origin with A-V and intraventricular conduction defects.

Admission urinalysis showed five to six hyaline casts and 60-80 white blood cells per high powered field. The hemoglobin on July 21 was 15.5 Gms., white blood count, 7,303 with a normal differential. Sedimentation rate was 1 mm. The blood urea nitrogen was 15; total cholesterol was 152. Serology was negative. The basal metabolic rate was 3 per cent. Chest x-ray on July 18, showed moderate increase in cardiac size and a small left pleural effusion; on July 28, there was reduced cardiac size with complete resolution of the pleural effusion. An electrocardiogram on admission (Fig. 5) showed auricular fibrillation with rapid heart rate and periods of ventricular tachycardia. There were frequent premature ventricular beats.

The patient was served a low sodium diet and digitalized with 1.2 mg. Lanatoside C intravenously followed by 0.4 mg. digitoxin orally and a maintenance dose of 0.2 mg. digitoxin daily. He also received mercurial diuretics. His congestive failure responded well to this management. However, there was difficulty in controlling the rate below 100. The electrocardiogram showed rather frequent extra-systoles. It was deemed unwise therefore to increase the digitoxin. He was given quinidine 0.2 Gms. four times daily because of runs of ventricular tachycardia. The patient lost forty pounds following an excellent diuresis.

On July 25, 1952, he was started on a regime for regulation of his fibrillation receiving 1.2 Gm. of quinidine on a two-hour schedule. On July 26, the total dose was 1.6 Gm. This was unsuccessful. The electrocardiogram (Fig. 5) then showed T wave inversion in the chest leads. On July 27 and 28, he was given no further quinidine. On July 29, he received 1.6 Gm. (0.4 Gm. every four hours for four doses). That night, approximately four hours after the last dose of quinidine the patient was found in a convulsive state, cyanotic, apneic, and pulseless. He was seen by the medical officer on duty whose opinion was that the patient had a cerebral embolus. The patient recovered consciousness in fifteen minutes. He presented no neurological changes on the morning following the convulsion. He was entirely lucid and felt quite well. He was again given quinidine 0.6 Gm. in three hours. The patient converted to a normal sinus rhythm (Fig. 5—electrocardiogram, August 6, 1952) about two hours after the last dose of quinidine. On August 7, the patient experienced another convulsion and was treated only with oxygen. The attack was characterized by apnea, cyanosis, and absence of pulse. No heart beat was heard. The attack lasted for approximately five minutes with gradual return to consciousness. Fibrillation recurred and the patient was again given 0.6 Gm. of quinidine on August 8. Late that afternoon he experienced another similar episode. The electrocardiogram then showed an abnormal rhythm with no P waves and wide QRS complexes (Fig. 5, August 8, 1952). Pronestyl intravenously was ineffective. Terminally a supraventricular regular rhythm occurred (Fig. 5, August 9, 1952). He died at 5 a.m., August 9, 1952.

At autopsy the heart weighed 700 grams. The average thickness of the left ventricular wall was 16 mm. and that of the right ventricular wall approximately 6 mm. No mural thrombi were noted in either atrium or ventricle. The endocardium appeared normal. The myocardium on section showed no evidence of old or recent infarction. No gross myocardial fibrosis was encountered. The coronary arteries were patent throughout with moderate sclerotic narrowing. The ascending aorta presented no unusual amount of atherosclerosis. The right lung weighed 700 grams and the left, 600 grams and both contained a moderate amount of fluid. The liver weighed 1,750 grams and cut section revealed nothing unusual. The brain was grossly normal with the exception of a small area of encephalomalacia in the right cerebellum. No emboli were noted in the brain. The heart on microscopic section showed areas of moderate fibrosis scattered throughout the myocardium (Fig. 6). The diagnoses were:

1. Idiopathic myocardial hypertrophy and fibrosis.
2. Heart failure.

Summary and Comment—Case 4.—This patient had myocardial hypertrophy of undetermined etiology with some fibrosis. Following an unsuccessful attempt at regulation of auricular fibrillation with quinidine the patient developed apnea and was found in a convulsion, cyanotic, and pulseless. The clinical diagnosis of cerebral embolus was suggested. The second attempt at quinidinization resulted in return to sinus rhythm and another convulsive episode similar to the first, and fibrillation recurred. With the third exhibition of quinidine an intractable tachycardia resulted. Failure to appreciate the syndrome of convulsions and apparent death as a toxic manifestation of quinidine led twice to unwarranted resumption of quinidine therapy. The bursts of ventricular contractions one of which is illustrated (Fig. 5, July 18, 1952) were present on admission and should have been recognized as danger signals. Also present were T wave changes during quinidine therapy (Fig. 5, July 26, 1952). The autopsy revealed no cerebral emboli. This death also probably would have been attributed to cerebral embolism had no autopsy been performed.

Case 5.— E. E., a woman aged fifty-four, was admitted to Mount Sinai Hospital, Minneapolis, June 26, 1952, and was discharged July 7, 1952. The patient had hypertension of ten years' duration and was admitted for treatment of auricular flutter. At the time of her admission a regular tachycardia of 152 was found. Auricular flutter with a 2:1 block was present. Cardiac enlargement with a left ventricular contour was found on x-ray examination. The patient entered the hospital digitalized but increasing doses of digitoxin were given until the auriculo-ventricular block approximated 4:1 and 5:1. On June 29, 1952, she was given quinidine 0.4 Gm. Within a half hour she had nausea and vomited 600 cc. of fluid. Two hours later she had a clonic convulsion followed by Cheyne-Stokes breathing, and finally almost a complete cessation of respiratory motion. Artificial respiration was instituted. She had a total of five convulsions, all of them clonic in character. She continued to have nausea and vomiting. Four hours after the original dosage of quinidine her electrocardiogram revealed only the development of auricular fibrillation. The following day an electrocardiogram showed returned auricular flutter with varying A-V block.

Case 5 represents a reaction following a single small dose of quinidine. The patient had auricular flutter with hypertension. The "test" dose was followed by severe nausea and vomiting, respiratory failure and many convulsions. During the seizure the flutter changed to fibrillation with subsequent reversion to flutter again. Recovery followed artificial respiration.

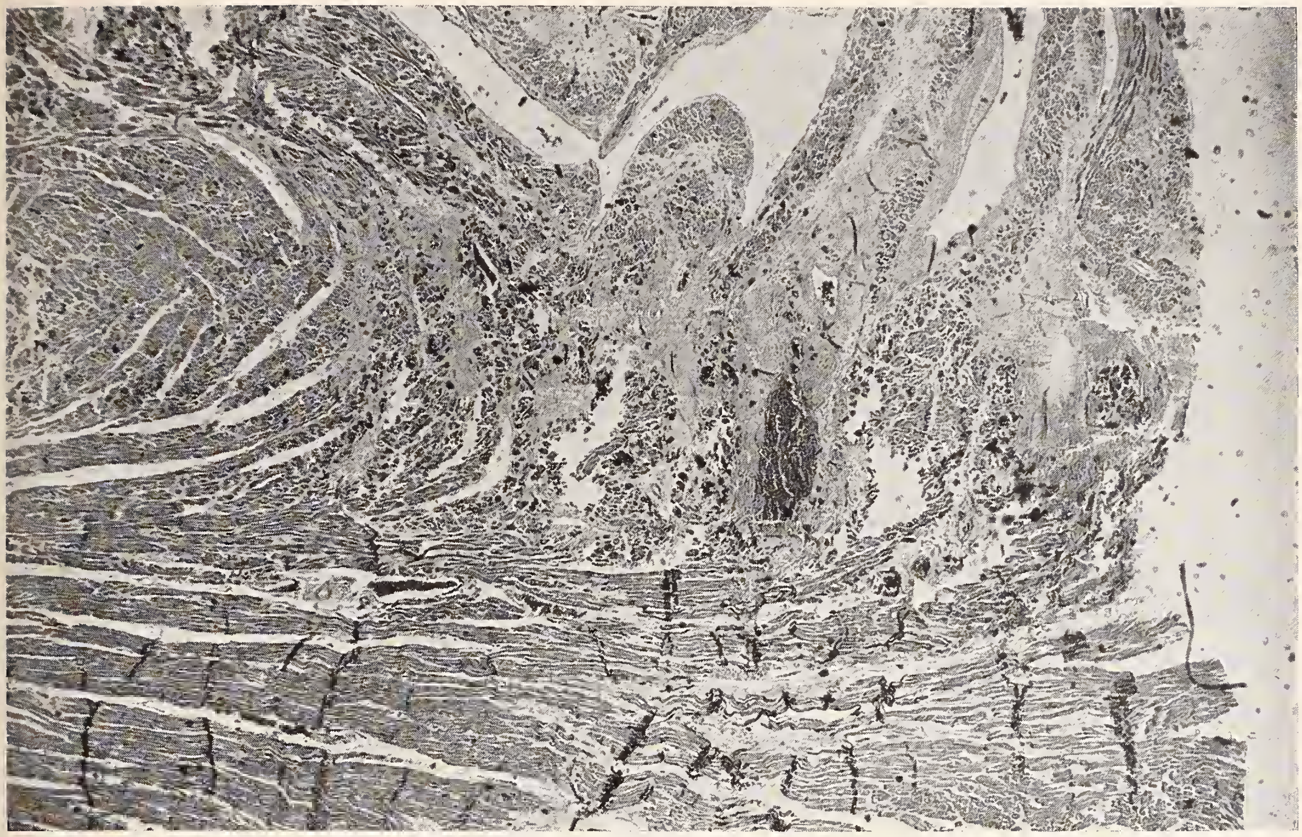


Fig. 6. Microscopic section of heart muscle in *Case 4* showing areas of fibrosis (20x).

Discussion

These five cases all showed remarkable changes in the cardiac mechanism during the period of quinidine intoxication. It is possible that the respiratory failure observed in all but the first case was a result of the acute cardiac collapse. The respiratory failure here reported differs from that observed in cats[8] treated with intravenous quinidine. These animals died in respiratory failure with vigorous heart beats continuing to the end. The value of artificial respiration shown in quinidine intoxicated cats seems also to apply to man.

Cases 2, 3, 4 and *5* showed acute cardiorespiratory failure following other evidence of quinidine effects. In *Cases 2* and *5* the collapse followed nausea and vomiting. *Cases 3* and *4* developed their fatal complications following regulation of fibrillation. *Case 4* also showed electrocardiographic changes that could be attributed to quinidine. It seems reasonable to consider the cardiorespiratory collapse also a quinidine effect.

The similar symptomatology in these cases can be grouped into a syndrome of quinidine shock. The patients who showed this picture all had convulsions during quinidine therapy. The syndrome is characterized by convulsions, respiratory failure, cardiac collapse, absent blood pressure, and pulselessness. It may be of brief duration responding to artificial respiration. The cardiac mechanism during the period of failure is variable but cardiac arrest and ineffective ventricular rhythms have been demonstrated. In each case the fatal or near fatal episode was preceded by or accompanied with other signs of quinidine effect. The syndrome resembles the effects described for cerebral embolization.[12] In our two autopsied cases emboli were not found.

The goal of quinidine in auricular fibrillation, the achievement of regular rhythm, may itself be the premonition of a serious or fatal toxic reaction to follow. It is likely that the reactions following quinidine regulation of fibrillation in the past interpreted as cerebral emboli in reality often represented this quinidine intoxication syndrome occurring shortly after regulation. It is not possible to offer rigid proof that the perverse results in these cases were in fact due to quinidine. All of our cases had serious heart disease. However exculpation of quinidine leaves no logical explanation for the syndrome described. General recognition of the possibilities of these serious reactions to quinidine should result in more cautious selection of fibrillators for regulation and more vigilant methods of exhibition of the drug. The dosages reported here are probably too high and are increased too rapidly. Weisman[15] recommends 0.2 Gm. of quinidine on the first day increased by increments of 0.2 Gm. daily to a maximum of 2.0 Gm. in any single day. It is probable that employment of such a slower schedule would have avoided some of the severe reactions reported here.

Conclusions

1. Five cases of complications arising during quinidine treatment of auricular arrhythmias are discussed. Four displayed acute cardiorespiratory collapse which was fatal in two. No emboli were found.
2. A syndrome of quinidine shock is described.
3. Artificial respiration is a useful measure occasionally life-saving when apnea follows quinidinization.

Bibliography

1. Berman, R., and Blumenthal, J. S.: Quinidine in auricular fibrillation. Minn. Med., 25:198-200, 1942.
2. Brain, W. K.: Diseases of the nervous system. London: Oxford University Press, 1940.
3. Clark-Kennedy, A. E.: On the therapeutic value of quinidine in the treatment of auricular fibrillation. Quart. J. Med., 15:279-318, 1922.
4. Dennison, A. D.: Quinidine a dangerous ally. J. M. Soc. New Jersey, 44:193-194, 1947.
5. Eyster, J. A. E., and Fahr, G. E.: Observations on the use of quinidine in auricular fibrillation. Arch. Int. Med., 29:59-63, 1922.
6. Frey, W.: Uber Vorhofflimmern beim Menschen und seine Beseitigung durch Chinidin. Klin. Wchnschr. 55:450-452; 55:849-853, 1918.
7. Gold, H.: Quinidine in disorders of the heart. New York: Paul B. Hoeber, 1950.
8. Gordon, B.; Matton, M., and Levine, S. A.: The mechanism of death from quinidine and a method of resuscitation; an experimental study. J. Clin. Investigation, 1:497-517, 1925.
9. Harris, K. E.: A series of cases of auricular fibrillation treated with quinidine sulfate with special reference to duration of restored normal mechanism. Heart, 14:283-288, 1929.
10. Kory, R. C.; Anderson, R. S., and Meneely, G. R.: Auricular fibrillation: Circulatory dynamics before and after restoration of normal sinus rhythm. Unpublished. Presented at Am. Heart Assoc. Meeting, Atlantic City, 1953.
11. Levy, R. L.: Restoration of the normal cardiac mechanism in auricular fibrillation by quinidine. J.A.M.A., 76:1289-1293 (May) 1921. Clinical studies of quinidine. IV. The clinical toxicology of quinidine, J.A.M.A., 79:1108-1113, 1922. Clinical studies of quinidine. Arch. Int. Med., 30:451-477, 1922.
12. McMillan, R. L., and Welfare, C. R.: Chronic auricular fibrillation. J.A.M.A., 135:1132-1136, 1947.
13. Santesson: Uber die Wirkung einer Chinaalkaloide auf des irregulare Froschherz und auf den Blutdruk des Kaninchen. Arch. f. exper. Path. u. Pharmakol., 32:312, 1893.
14. Smith, H. L., and Boland, E. W.: The treatment of auricular fibrillation with quinidine and strychnine. J.A.M.A., 113:1017-1022, 1939.
15. Weisman, S. A.: The ambulatory treatment of auricular fibrillation with quinidine. Minn. Med., 19:349-352, 1934. Further studies in the use of quinidine in the treatment of cardiac irregularity. Minn. Med., 22:385-389, 1939. Review and evaluation of quinidine therapy for auricular fibrillation. J.A.M.A. 152:496-500, 1953.
16. Wenckebach, K. F.: Uber die unregelmassige Herztatigkeit und ihre klinische Bedeutung. Leipzig: W. Englemann, 1914.
17. Wolferth, C. C.: Depression of cardiac conductivity during quinidine therapy. J.A.M.A., 8:1289-1291, 1923.
18. Wolff, L., and White, P. D.: Auricular fibrillation. Results of seven years' experience with quinidine sulphate therapy. Arch. Int. Med., 43:653, 1929.
19. Yount, E.; Rosenblum, M., and McMillan, R. L.: Use of quinidine in treatment of chronic auricular fibrillation. Arch. Int. Med., 89:63-69, 1952.

THE PHYSICIAN AND HIS ESTATE

(Continued from Page 1035)

lull yourself into false security by assuming otherwise. Next, your affairs and your estate, no matter how small, deserve and are worth putting in order. You have spent a lifetime acquiring that estate. The least you can do is to spend some hours and a few dollars in protecting it and in planning its disposition. In one sense, a will is the most important instrument you will ever sign for it disposes of all of your property. If you do not plan your estate in the light of present laws, then you must take the consequences of no planning or of poor planning. The unfortunate thing about it is that you are not the one to suffer. Your beneficiaries, instead, are the ones who sustain the real burdens of thoughtlessness and improvidence on your part.

There is a line of poetry which the author Robert Service himself characterizes as "a pregnant phrase." That phrase, "it is later than you think," is appropriately applicable to estate planning and your specific personal problems. Please keep it in mind when you consider in the future, as I am sure you have in the past, day-to-day deferral in getting your affairs in order.

THE MEDICAL TECHNOLOGIST AND THE UNIVERSITY OF MINNESOTA

WESLEY W. SPINK, M.D.
Minneapolis, Minnesota

THE INVITATION to address you this evening was extended by representatives of "The Orbs," which I have since found out is a scholastic honorary society in Medical Technology at the University of Minnesota. The assignment was gladly accepted because it would give me an opportunity to express my appreciation to the technologists and to their preceptors, all of whom are such an integral part in the care of the patients, the teaching, and the research that are carried out at the University of Minnesota Hospitals. All of us in the field of clinical investigation owe a deep sense of gratitude to you who have contributed so much to our efforts. Prior to the preparation for this talk my knowledge of Medical Technology at Minnesota was related to personalities and to the cold results of their work, rather than to an intimate knowledge of the basic purpose and philosophy of that department. And so to acquaint myself with Medical Technology at the University, the advice of instructors in the Department was sought, especially from Miss Ruth Hovde, who is Senior Adviser. I then repaired to the Archives of the University of Minnesota and read the early bulletins pertaining to the Course in Medical Technology, and examined the Annual Reports of the President of the University and the Dean of the Medical School to obtain a measurement of the program that had been made in this field of education. The results of this quest are now shared with you along with some thoughts on the function of a University.

The Orbs

The primary objective of any University is scholarship, an endeavor in which a community of scholars synthesizes and crystallizes the accumulated knowledge of the past, and also probes into the future. This objective was formally recognized by the medical technologists at the University when on March 1, 1935, an honorary society based on scholastic attainment was organized through the guidance of the late Dr. William A. O'Brien and Mrs. Gordon Erskine. The purpose of the organization was to stimulate high scholarship and to encourage honesty, accuracy and self-reliance. The name Orbs was chosen for the Society because, "it means eye. In our profession we are the laboratory eye of the doctor." And for the emblem on their pin, they had placed an eye, a microscope and a retort. But most important, eligibility for membership rested upon the attainment of a 2.0 average or above for University work by the winter quarter of the Junior year. And remember, such an average reflects genuine ability since the work of the "Med Tech" in the first two years is in the College of Science, Literature and Arts.

The Early History and Development of the Course in Medical Technology

A course in medical technology was initiated at the University of Minnesota in 1922. The first announcement on March 10, 1922, stated:

> "The demand for clinical and laboratory technicians, trained in the principles and technique of the medical sciences is increasing. The technician, so trained, is an aide to the physician, the surgeon, the medical specialist, the group clinic, the hospital, or the teaching and research laboratory. The vocation is one that offers satisfactory objectives, a large measure of usefulness, and fair compensation."[1]

The requirements for admission to this new four-year course were the same as those for entrance into the College of Science, Literature and Arts. And thereby, Medical Technology at the University of Minnesota began with high standards required of its students. A Committee of Advisers for the students was set up with Dr. R. O. Beard, as Chairman, and Dr. S. Marx White and Dr. W. P. Larsen.

In the President's Report for the years 1922-1923 we find this progress report by Dean E. P. Lyon:

From the Department of Medicine, University of Minnesota Hospitals and Medical School, Minneapolis.
Presented at the Annual Medical Technology Banquet at the University of Minnesota on May 14, 1953.

> "In the new courses in Medical Technology six students have been registered in the Medical School, but a larger number are doing the preparatory work of the first two years in the College of Science, Literature and the Arts."

Then in the President's Report for 1923-1924, President Lotus D. Coffman pointed out with cold statistics and with the accompanying table the numerical gain in the enrollment in the course of Medical Technology.

Year 1922-23			Year 1923-24			
Men	Women	Total	Men	Women	Total	Net Gain
0	5	5	1	5	6	1

Medical Technology grew slowly, but on a firm foundation. Although small numbers of students enrolled for this course, the administration, to its everlasting credit, refused to lower the standards, and we see recorded in the announcement of 1926 the basic philosophy of this course, and the continuance of the high standards.[2]

> "The demand for well-trained laboratory technicians is increasing. Positions may be secured in hospitals, clinics, and physicians' offices. Three types of individuals are holding them: (1) University graduates in technology; (2) short course graduates, and (3) those whose training has been acquired by practice under preceptors. The University of Minnesota does not offer any short courses. The regular four-year course is open to graduates of accredited high schools. The rules for admission and registration are those of the College of Science, Literature, and the Arts. The first two years are essentially the same as the pre-medic requirement. The last two years are spent in the Medical School and University Hospital Laboratory or other approved laboratory."

One interesting development in the history of this course is reflected in the announcement of 1929, the seventh year of the undertaking, and that is men were specifically advised not to enroll in the course.

> "With the rapid increase of laboratories in hospitals, clinics and medical schools, medical technology offers a splendid field for women at the present time. Men, as a rule, are not advised to take the course."[3]

One is hard put to interpret the following announcement of the course that appeared in 1930.[4] In almost an amusing fashion, it placed a premium on women for Medical Technology, and bluntly discouraged any prospective male registrants. This announcement was undoubtedly penned after the economic crash that occurred in the Fall of 1929. The depression was on. Could this fact account for the tenor of the statement?

> "Well-trained laboratory technicians are in demand. Positions may be secured in physicians' offices, clinics, hospitals, research laboratories, and medical schools. As a general rule, a student, who is able to do things with her hands, likes routine work, and excels in scientific work, will make a good technician. Ability to cook and sew is an excellent asset for would-be technicians. Men are not advised to take the course because of limited opportunities for employment at the present time."

But we must move on. As more and more quantitative methods were introduced into the practice of medicine, and clinicians placed increasing reliance upon laboratory procedures, there was a greater demand for well-trained medical technologists. We learn that by 1953, over one thousand individuals have received the degree, Bachelor of Science, from the University of Minnesota, after successfully completing the course in Medical Technology. You will note that I say "course in Medical Technology." Medical Technology does not comprise a School at the University of Minnesota, nor even a separate department. It still is a course with the work in the first two years in the College of Science, Literature and the Arts. Beginning with the third year, the student is registered in the Medical School, and the fourth year is spent in rotating through the laboratories of the University of Minnesota Hospitals.

Medical Technology at Minnesota may be divided into three eras. First, the birth of a concept that took place under the direction of a Committee headed by Dr. Richard O. Beard. The numbers of enrolled students were small at first, but a sound and thorough training was offered to the registrants. The second era was that of growth, which occurred under the leadership of the late Dr. William A. O'Brien. He was a remarkable leader. He was a good man. He liked people. He possessed that unique ability for crystallizing the important aspects of medical knowledge, and then communicating the information in simple language so that all might understand. The third era is that of arriving at maturity under Dr. Gerald T. Evans. He has welded together a capable group of administrators and supervisors so that Medical Technology plays a tremendous role in the daily activities at the University Hospitals, as I shall point out shortly. In judging the success of any department in a medical school, I do not do so on the basis of the accomplishments of the head of that department, but rather upon the abilities and achievements of the second, third or fourth individuals in the administrative hierarchy. Could the department run on just as smoothly if the leader were to suddenly drop out, and either of several other individuals were to take over? If this could be effected, then the administrator has done a good job. It is significant that Dr. Evans has recognized this. He has delegated authority along with responsibility, and hence the continued success of Medical Technology at the present time.

The fundamental strength of the training that is presented in Medical Technology is that capable students are selected, and their activities are then integrated within the University, Medical School, and the Hospitals. Because these students, including all of you, have joined a community of scholars known as a University, let us make a momentary diversion and recall specifically your relation to the University as a whole.

The Medical Technologist and the University

The word, university, is derived from the Latin, *universitas,* which originally meant a community or corporation. The university started in medieval times as a scholastic guild composed of teachers and scholars, and was probably patterned after the trade guilds. All down the ages membership in a university has been a mark of distinction, emphasizing intellectual achievement and scholarship. It is a precious privilege for any boy or girl to attend a university, and this also includes attendance at a liberal arts college. A university education has two essential goals. The first is most fundamental, and considerably more important in the long run than the second. It is concerned with the development of the human intellect. The primary concern of the college student should be an engagement in exploring his own mind and learning how to think, which in turn will aid him in how to live with himself and with the world. The distinguishing mark of a college graduate should be his choice of values—in all human activities. His selections should be made after mature thought—and not impulsively, and not on the basis of prejudice. In this process he is motivated and abetted by distinguished teachers. In the lecture room and in his studies he has placed before him the panorama of accomplishments, errors, tragedies and happiness of the ages. An inventory of this information is his for the effort. In this learning process, I am a firm advocate for a study of the humanities in a liberal arts college that brings with it excursions into history, literature, economics and philosophy. I attended and was graduated from Carleton College, which is a liberal arts college. I pursued the premedical course. But very fortunately for my own future happiness and intellectual pleasure, I was exposed to the contents of a liberal arts curriculum. The one course in college which made more of a lasting impression upon me than any other was "Nineteenth Century Prose," introducing me to the writings of Carlyle, Newman, Matthew Arnold, Ruskin and others. This served as a foundation for further reading, which persists to the present day. This enduring enjoyment of literature was motivated by a great teacher who with uncanny selectivity and enthusiasm spoke about the "purple patches of literature" and then led us to those patches where we browsed, and I have since continued to do so. My own experience and the subsequent contacts that I have had with professional people make me a firm advocate for a liberal arts education for every individual who plans to enter a profession. But I note that I have forgotten about the second goal in a college education, and that is the more utilitarian one of learning how to make a living. It seems to me that this is inevitably a by-product of the first, and that anyone who can master the art of thinking can manage the practical end of specialized knowledge, such as a profession offers, or of successively entering into the competitive business community without further university training.

That which appeals to me so strongly in the course of Medical Technology is the emphasis during the first two years in the University upon the liberal arts. First, registration is necessary in the College of Science, Literature and Arts, and second, ninety credits of electives are required. If I were advising any student in Medical Technology I would be more concerned about those electives than the scientific subjects. The careful selection of courses and teachers can only result in the expansion of the outlook of the student, and add to his intellectual dignity.

The Medical Technologist and the University Hospitals

It is in the last year that the medical technologist culminates his or her formal university training by working at the University Hospitals. Study and work are now tinged with an additional emotional glow because the student will have personal contacts with the patients and will share in the responsibility for the care of sick individuals.

The University Hospitals constitute a unique institution. There is no other like it in the State of Minnesota. The hospitals have a threefold purpose: first, the care of patients; second, the training of doctors, dentists, nurses, medical technologists, physiatrists, social service workers and hospital administrators; and third, the prosecution of medical research. In each of these fields, the medical technologist plays an important role. The primary objective of a hospital is to care for sick people. While modern medical science has made tremendous progress in the diagnosis and treatment of human disease, the successful application of this knowledge takes well coordinated teamwork within an institution. The amount of laboratory procedures carried out by medical technologists in this pursuit is phenomenal. It is in this sphere that honesty and accuracy in the performance of work are so essential. The interpretation of laboratory data supplied by the technologist may be the turning point in a patient's life. Consider the responsibility that rests upon a technologist who has cross-matched blood for a transfusion. The patient is having a serious hemorrhage on the operating table. While the operation continues and the patient is completely anesthetized, whole blood is dripped into a vein. Under these circumstances a mistake in cross-matching might go unrecognized until the patient is in serious trouble, and death might well occur. Such instances of responsibility shared by the technologists could be multiplied many times.

In the training of medical doctors, especially undergraduate medical students, interns and residents, the technologist is of considerable aid in the accomplishment of this effort. Too many physicians in every-day practice call for laboratory procedures, even the more simple ones, without much knowledge of the technique employed or the real significance of the results. It is for this reason that the medical student performs laboratory procedures himself during the course of his training under the supervision of medical technologists. At the University Hospitals, it is remarkable what a thorough briefing a student can get in the hematology laboratory. On the other hand, the medical technologists sit in on clinics in order to observe how their work is applied by the clinicians in the care of the patients. It is just as well for a technologist to know the significance of her work as it is for the physician.

No university center is worth its salt unless its personnel is contributing to new knowledge in the interest of human welfare. And so, the University Hospitals over the years have made major contributions to medical research. Fortunately, the administration under Mr. Ray Amberg and Miss Gertrude Gilman have fostered this ideal of a University Hospital. Clinical investigation calls for careful quantitative measurements and the results of the work of the medical technologists have brought universal recognition to more than one member of the Staff. A pleasing aspect of working at the University Hospitals is to note and feel the genuine interest that the medical technologists and nurses have not only in the care of patients, but also in the medical research being carried out by the Staff. And this mutual interest in that which is new is due in large part to the indoctrination by the various administrators and instructors. There is a certain thrill and pleasure enjoyed by all the hospital personnel in seeing for the first time a procedure or a drug that brings relief to human suffering.

Concluding Remarks

And now, let us again consider the motto of the Orbs—*"honesty, accuracy, self-reliance."* These words and what they symbolize in the light of human experience can be profitably shared by physicians, nurses, technologists—or anyone, charged with the care of patients. And particularly in the field of medical research, one must be objective and record the findings as they occur. This is the experimental method. But unfortunately, the great mistakes are often made

(Continued on Page 1066)

Laboratory Aids to Medical Practice

Sponsored by
The Minnesota Society of Clinical Pathologists

PRACTICAL CONSIDERATIONS IN CERVICAL CYTOLOGY

DAVID C. DAHLIN, M.D.
Rochester, Minnesota

IT HAS BEEN established that cytologic methods are an important aid in the diagnosis of preclinical carcinoma of the uterine cervix. Such invisible lesions are usually *in situ* but occasionally they show infiltration. Cervical smears are of little practical value in the diagnosis of clinical malignant disease of the cervix or fundus of the uterus, in which conventional diagnostic procedures are necessary,

Carcinoma of the uterine fundus is more evasive to the cytologist than is cervical malignancy. The former lesion is, moreover, less common and more curable than the latter. These factors combine to focus the cytologist's attention on the detection of cervical carcinoma when it is in an early, curable stage. Squamous cell carcinoma of the cervix constitutes more than 90 per cent of malignant lesions in this location and these begin, almost without exception, at the squamocolumnar junctional zone.

It appears logical that smears prepared from material scraped from this junctional zone would be more likely to contain malignant cells than would smears from the vaginal pool. This has been found to be true. Examination of a single slide smeared with material scraped off with a wooden spatula or even a cotton-applicator stick yields a high percentage of positive results in preclinical cervical carcinoma. It is important that material scraped from the endocervical canal be included in the smear. In some women, the squamocolumnar junctional zone is well above the external cervical os.

Immediate fixation of the smear before any drying can occur is the next step. Ethanol (95 per cent) is a cheap and highly satisfactory fixative which may be re-used after filtration. The cells in the smear are adequately fixed in approximately ten minutes, but slides may be kept in the ethanol indefinitely. Allowing the fixed preparations to dry before final processing causes minor but definite cellular alterations.

In the next step, which is staining, good nuclear detail is the most important result. This can be secured by staining with ordinary hematoxylin and eosin. More complicated stains afford little or no advantage to the cytologist interested in the detection of cancer.

Thorough scanning of the stained smear takes approximately ten minutes. The slide must be examined in its entirety with the aid of a mechanical stage. When any appreciable number of smears are examined in a laboratory, it is impractical not to employ trained technicians to do the initial screening. Such technicians can mark any questionable or malignant cells and the cytologist can render the verdict. A trained technician can stain and screen approximately 5,000 slides per year and also care for the associated clerical work.

Suspicious or obviously malignant cells in smears prepared as just described almost invariably come from the cervix. The incidence of false suspicious and false positive results obviously will depend on the ability of the cytologist. His goal should be to minimize subsequent fruitless investigations of patients requested as a result of this procedure.

When further study is indicated because of the cytologic findings, the appropriate diagnostic procedures are readily defined. It is imperative that the entire squamocolumnar junctional zone be delivered to the pathologist. This can be accomplished best by procuring a cone of tissue from the region of the external cervical os with a scalpel. Cauterization of this tissue should be avoided because the diagnosis of carcinoma *in situ* depends on cytologic details that are destroyed by

---

From the Division of Surgical Pathology, Mayo Clinic, Rochester, Minnesota.

cooking. Multiple punch biopsies that consume the junctional zone perhaps are nearly as efficacious as a cone specimen for the establishment of the proper diagnosis. If the atypical cells are not explained by examination of tissue from the cervix, dilatation and curettage must be done. The cytologic pathologist is unable to increase his capability in the handling of troublesome cases unless his gynecologic colleagues supply him with adequate specimens for biopsy when atypical cells have been obtained from patients. He should not be satisfied with specimens that do not reveal the origin of the cells which caused him to render a "suspicious" or "positive" report.

Properly prepared and examined smears will result in the detection of early, usually curable carcinoma of the cervix uteri in approximately 0.8 per cent of women whose cervix appears benign.

This is the ninth in a series of editorial reports sponsored by the Minnesota Society of Clinical Pathologists and designed to foster closer relationships between laboratory physicians and their colleagues. Since the pioneer work of Papanicolaou, use of the "Pap" smear technique has become widespread. Similar to the experience in many procedures, the immediate acceptance of this relatively new laboratory aid to medical practice perhaps was a bit too enthusiastic. The technique appeared to be so simple that many persons who had minimal experience with the vagaries of cytologic diagnosis drew diagnostic and therapeutic conclusions on insufficient evidence. As a result, some unnecessary treatment was given on the basis of false positive results, whereas in other instances, baseless security was experienced because of false negative results.

It is now recognized that considerable background in cytologic detail is necessary for adequate evaluation of a cervical smear for malignant cells. The pathologist, because of his training and his knowledge of cellular changes, both physiologic and pathologic, is equipped for this work, particularly in a supervisory capacity. The importance of cytologic diagnosis has been recognized to the extent that various training centers have been established to offer courses of instruction of several months' duration to both physicians and technologists.

Reprints of most of the reports in this series are available from the authors or the chairman of the editorial committee of the Minnesota Society of Clinical Pathologists. Dr. Arthur H. Wells, of Duluth, and Drs. Arthur H. Sanford and George G. Stilwell, of Rochester, who make up this committee, solicit comments concerning this series and welcome suggestions regarding material for inclusion in future reports.

George G. Stilwell, M.D.,
Chairman, Editorial Committee

Mayo Clinic,
Rochester, Minn.

THE MEDICAL TECHNOLOGIST AND THE UNIVERSITY OF MINNESOTA

(Continued from Page 1064)

not in the objective recording of the results, but in the interpretation. This second step calls for cool judgement, wisdom and freedom from prejudice. These in turn are achieved only through years of experience and a continual practice of those intellectual disciplines learned in college, or even without college.

But one may extend this motto of the Orbs into daily living. There is the need, more than ever, for honesty and accuracy in dealing with other people, with other nations. Too often, human misery results from misunderstanding, which engenders hatred and bitterness. The maintenance of human dignity means the adherence to certain principles of conduct culled from the experience and intelligence of the human race down through the centuries. A continual adherence to those principles will require self-reliance and the utmost courage at times. The pattern of a crowd culture bringing with it social and political recognition is not always too tasteful. Therefore, the individual who believes in *"honesty, accuracy, self-reliance"* may have to go it alone at times—but it is worth it.

References

1. Bulletin of the University of Minnesota, Vol. XXV: No. 2 (Mar. 10) 1922.
2. Bulletin of the University of Minnesota, Vol. XXIX (Sept. 9) 1926.
3. Bulletin of the University of Minnesota, Vol. XXXII (Apr.) 1929.
4. Bulletin of the University of Minnesota, Vol. XXXIII (Aug. 27) 1930.

Case Report

CESARIAN SECTION COMPLICATED BY CHOLELETHIASIS

HOWARD A. VOGEL, M.D.

New Ulm, Minnesota

While multiple procedures at operation should be avoided, it occasionally happens that the surgeon is forced to perform more than one operation on the same occasion. Mrs. H is an example.

Mrs. H's last menstrual period was on June 7, 1952, and her expected date of confinement was March 14, 1953. She had had a previous cesarean operation and she complained of attacks of severe pain located in the right upper quadrant of the abdomen throughout this second pregnancy. A cesarean section was done on March 5, 1953, because of a cephalo-pelvic disproportion or inadequate pelvic outlet. Previous section had been performed two years previous. At the time of her operation, the gall bladder was found to contain many stones. Blood and urinalysis reports were normal.

Operation—A midline incision was made under local nerocaine anesthesia, and a transverse incision was made in the lower cervical segment of the uterus. The baby was rotated and delivered as a breech. Next, the placenta was removed and pituitrin was injected into the uterine wall. Closure was made with two running catgut No. 1 chromic inverted Lempert sutures. The lower peritoneal flap was sutured to the uterus superior to the uterine incision and the upper flap inferiorly to the lower flap. Ergotrate was injected into the uterine wall, causing a firm contraction of the uterus. The gall bladder was then examined again and it was found that the patient had a large hydrops of the gall bladder and one large stone about 2 inches in length and 1 inch in diameter. There were also several small stones. This distended gall bladder extended at least 3 inches beyond the liver edge, and both my assistant and I felt that she should have it removed. We extended the incision about 2 inches, and the abdominal wall was so relaxed that we removed the gall bladder with ease. The cystic duct and cystic artery were tied separately with linen. Then we dissected the gall bladder from below and peritonealized the bed with atraumatic "0." A million units of penicillin were dropped into the region of the bed. We then examined the appendix and found it to be thickened and distended. Therefore, we did a routine prophylactic appendectomy. A million units of penicillin were dusted into the right lower quadrant. No drain was placed into the peritoneal cavity, and the uterus was again examined for bleeding. There was none. We then proceeded to close the abdomen in the routine fashion—peritoneum, muscle, fascia, fat, and skin. Six retention sutures were placed. The patient received 500 cc. of blood during the operation and left the operating room in good condition. The sponge count was correct.

On examination of the gall bladder, it was found to be greatly thickened and contained what proved to be sterile bile. It was dilated and protruded beyond the liver. It contained one large yellow stone, 2 inches in length and 1⅛ inches in diameter and about five or six small stones. The lumen of the appendix was dilated.

The histological diagnosis was as follows: "The gall bladder is 9.5 cm. in length. The wall is thick. The mucous membrane is rough. The appendix is 5 x 1 cs. The surface is smooth. Sections of the gall bladder show an active chronic cholecystitis. Sections of the appendix show no active inflammation." (Pathologist—J. S. McCartney, M.D.)

Mrs. H made an uneventful recovery, and both she and her normal male infant were discharged from the hospital on March 15, 1953.

THE PROBLEM OF LUPUS ERYTHEMATOSUS

(Continued from Page 1045)

sive. If the patient survives the acute or critical phase, prolonged convalescence with maintenance therapy will probably be necessary. The prognosis is always guarded and even if the patient survives the severe attack, invalidism usually of a profound degree ensues and relapse to a severe phase is a common occurrence.

The cure, if one may use the term, must be reckoned in months or even years. Acute or protracted systemic lupus erythematosus is indeed a severe and devastating disease and must so be considered. Undue optimism because of initial response, especially to steroids, must be discouraged.

MEDICAL HISTORY OF THE COUNTY OF YELLOW MEDICINE

MILDRED B. LEE

Granite Falls, Minnesota

(Continued from September issue)

In 1894, Dr. J. W. Donnell of Clarkfield was elected coroner, and held this office until June 16, 1898, when he himself became the subject of coroner's inquiry. On that date he committed suicide by first taking a dose of strychnine and then cutting his throat with surgical scissors.

Dr. Franklin J. Cressy of Granite Falls was then appointed coroner and held the office until after 1900.

Death by violence was rare but not unknown in Yellow Medicine County. Coroners were called to pass upon the death of John Purvis, who was murdered by his wife. Joseph Ott shot and killed his wife in a drunken rage, and was hung upon a scaffold erected in the rear of the jail; the last man upon whom capital punishment was inflicted before the repeal of the law. August Baierl of the western part of the county killed his son in an argument over money matters, and four men died in a box car at Clarkfield as a result of fire. The voters elected a doctor to this office whenever they had an opportunity to choose, showing they were not unaware of the need for a trained man for this office.

The Newspapers

To doctors the newspapers of Yellow Medicine County have ever shown a kindly interest and consideration not vouchsafed to members of any other profession, however necessary to the community. This seems to be true especially of those doctors who paid them the subtle tribute of choosing them as advertising mediums, although it does not seem that the small sum paid for the insertion of a professional card would in itself entitle the doctors to preferential treatment. In the early days of settlement the doctors were naturally often the best educated persons in the community, and they were also newsworthy as persons likely to be in the midst of interesting events.

The editor was the first to hear of the impending arrival of a new doctor, and he obliged by passing on the news to readers along with a brief and favorable statement of the doctor's intentions, qualifications, and place of origin. In a week or two this would be followed by a professional card, after which the doctor's activities would be fully chronicled. As to those who did not so advertise, the researcher is forced to the conclusion that either they were singularly retiring or that the newspaper never found out about their activities. In settlements where there were no newspapers, or where early files were not preserved, all records of the work of pioneer doctors have been lost.

The weight of editorial opinion throughout the county was that the "liquor habit" was deleterious to health and morals, and was in short the root of all evil.

There are few issues of the *Granite Falls Journal* and *Tribune* that do not contain dissertations upon the evils of strong drink. The *Clarkfield Advocate* was also much concerned about the "cigarette" habit which it considered equally dangerous; they were "coffin nails." While the *Canby News* also condemned the liquor habit, it campaigned principally against the sale of "dairy butter" and in favor of meat inspection.

The newspapers also supplied information on matters relating to health as well as morals, along with household hints and advice about the treatment and prevention of various diseases. It is noted that the juice of the pineapple was being used in Saint Paul successfully for the cure and treatment of diphtheria (1889); that "consumption" might be contagious; that chewing gum caused defective eyesight because it affected the nerves that lead from the spine to the optic nerve. It is reported that a French physician had discovered that milk absorbed germs, and had effected cures of smallpox, fevers, diphtheria, by wrapping patients in sheets dipped in milk. "A pint of milk is required." To prevent infection, "Smoke any wound with burning wool or woolen cloth. Twenty minutes of this will take the pain out of the worst case of inflammation arising from a wound," and "This simple home remedy deserves to be embossed in letters of gold in every household."

Advertisments of patent medicines were often disguised as news items and included among the current events noted, both in the "filler" of the inside pages and the locally printed columns. The various kinds of "bitters," ointments, tonics, and health appliances such as the "magnetic belt" took up a large share of the advertising space.

In January, 1887, it is reported that the temperature was forty-seven degrees below zero, but there is never any suggestion that the climate of Yellow Medicine County is anything but "bracing," exhilarating, and healthful. Freezing of feet or hands was a fairly common occurrence in severe winters, and frostbite must have been even more common but it seems to have been taken for granted that the only treatment for this was already well known. The public was supposed to be interested in all matters of health, particularly in surgery. When a young girl had to have an operation in "the city," it was noted that she "was very brave for one so young." In February, 1887, the *Granite Falls Tribune* undertook to describe an operation:

> "Large, bulky, good natured John Otis survived an operation on Thursday last that he will long remember. When a boy he hurt the small toe of his right foot and ever since it has been the source of not a little discomfort. Making up his mind to have it amputated he signified his resolve to Dr. Stratton, who sharpened up his instruments. Prostrating his physical anatomy on the hide of an animal now nearly extinct, Dr. Nare produced the conelike vase that contains the perfume of many roses known in medical parlance as ether, and taking a position exactly astride John's knowledge box proceeded to administer it,"

going on to relate how the editor and two other men were impressed for the job of holding the patient down on the table, how he struggled and howled with pain, and how the editor soon decided he had urgent business elsewhere.

The *Granite Falls Journal* was established in 1875, taking over the stock and equipment of the defunct *Granite Rock*. The *Granite Falls Tribune* was established in 1883, the *Canby News* in 1878, the *Canby Tribune* in 1882. Wood Lake had a newspaper for one year in 1891, the *Wood Lake News,* which was followed by the *Wood Lake Ledger* in 1895 and published only a short time. The *Hanley Falls Leader* was published by the *Tribune,* in 1892, also the *Hanley Falls Herald.* The *Clarkfield Reform Advocate* began publication in 1892, the *Echo Enterprise* in

1894. For the foreign born, which comprised the largest part of the population of the county, there were the *Sacred Heart Bladet,* beginning in 1891, and published in Granite Falls, the *Minnesota Folkeblad,* and other short-lived publications.

Camp Release Medical Society

Camp Release Medical Society was organized as a branch of the State Medical Society, and originally included Renville, Redwood, Kandiyohi, and other counties served by the Minneapolis and St. Louis Railroad in the area. In the early years of its existence travel to the meetings had to be by train, and this circumstance was taken into consideration when organizing the membership and arranging the meetings. At the present time its membership includes the Counties of Yellow Medicine, Chippewa and Lac qui Parle only.

The exact date of the organization of the Camp Release Medical Society is not known, as all of the early records have been lost. The earliest records now in possession of the Society date from the fall of 1916. The earliest of the minute books records the death in that year of Doctors Cressy, Stratton and Beck, all members of the Society.

Granite Falls Hospital

1898-1910

The first hospital in Granite Falls was established in the fall of 1898 by Dr. N. H. Scheldrup. It was housed in a green frame house of eight or ten rooms which had been the homestead of Henry Hill, founder and promoter of the city of Granite Falls, who had spent his entire fortune in the hope of establishing a city which would be the center of a great milling industry at the falls. The house was located at the top of the hill rising from the river, near the site of the municipal power plant and what is now Miller Street.

The hospital was intended for the accommodation of Dr. Scheldrup's patients, but any doctor was free to bring his patients there for care. Miss Marie Agee, of Chicago, a registered nurse, and of Danish ancestry, was put in charge of the hospital. She continued in this position until her marriage to Walter W. Stoppe, of Granite Falls.

Dr. Scheldrup had a large practice and did much surgery, and soon the facilities of the hospital were found to be inadequate. In 1900, Dr. Scheldrup purchased the property known as the Pinney homestead in West Granite Falls, located on Ninth Avenue and just off the main, or Prentice Street. This large, two-story home provided extra space for patients and also for a well-equipped operating room and laboratory. A registered nurse was in charge, and the doctors who brought patients there employed nurses of their own choice. These were usually practical nurses or women with some experience in the care of the sick.

In 1901 Dr. Scheldrup took into partnership Dr. Frank H. Hacking, who was then practicing at Wood Lake, and they supervised the hospital and used it in their practice as long as they remained in Granite Falls. Perhaps the most notable patient was the young man who was fatally wounded by Dr. Wintner in an argument over losses in a poker game.

Dr. Scheldrup left Granite Falls in 1906, but the hospital continued in operation. It went out of existence about 1910.

Biographies

Biographies should be written and portraits painted when the subject is at the height of his powers and the impress of his work and character is still clear.

The researcher who depends upon the recollections of those who knew him in order to clothe with some semblance of life the bare bones of statistics in any given case; finds all too often that it is the departure from the norm that sticks in memory. If, therefore, some competent and devoted doctors who went quietly about their work seem to have been slighted, it must be attributed to this propensity, and to the fact that after a lapse of more than fifty years the best of memories grow dim.

Wherever possible biographical data has been referred to relatives for accuracy. In other cases the researcher has drawn upon all available sources with the best of intentions if not the best results.

William A. Angell was born to Quaker parents in Saratoga County, New York, on March 5, 1870. His education was begun at the Academy of Glens Falls, New York, and upon completion of his studies there he came to Minnesota and entered the medical department of the University of Minnesota. He graduated in 1895, and then took examinations for appointment as house physician for St. Barnabas Hospital, Minneapolis. Receiving this appointment, he remained in this post for a year; married Jessie Langdon, a nurse, and then moved to Canby, Minnesota, to begin his medical practice.

Dr. Angell's first offices were on the second floor of a building which housed an implement store. His first home was in the rooms which adjoined his offices, in the same building. As both the Angells were friendly, unpretentious, and blessed with more than average good looks, they soon made friends in this fast-growing community.

Dr. Angell was a man of medium height, with brown hair and eyes and regular features. A photograph of him taken about 1898 shows him wearing a full but well trimmed and pointed beard, side burns, and heavy mustache above a rather full lipped mouth. His hair was parted in the middle after the fashion of the time, above a broad forehead, and his beard does not conceal a firm, rounded chin. Dr. Angell is described by a friend as "having the most beautiful personality a man ever had" and Mrs. Angell as a beautiful woman and a "grand person."

Dr. Angell soon had a large practice. He was very successful, being remembered as one of the best physicians ever to practice in Canby. As his practice grew it extended beyond Canby, throughout the county, north to Dawson, and west as far as Brookings, South Dakota. In order to cover this large territory he acquired two teams of horses and two drivers, and was often obliged to take his rest sleeping in the carriage as he went from patient to patient. He knew how to protect himself against the cold, wearing a long coonskin coat, fur mittens, felt boots in which he always kept a pair of shoes ready to be stepped into. Dressed in this manner he never seemed to feel the cold. Except for this outer clothing he wore the same weight of clothing summer and winter, which was unusual at that time.

Dr. Angell had no church affiliations in Canby. He became one of the first members and officers of the Modern Woodmen of America, North Star Camp 4214, organized in Canby in October, 1896; of the Cassiopea Camp of Royal Neigbhors, organized in 1899, and of the Modern Brotherhood of America Lodge, organized in 1899. He also served as county physician for the west eight townships of the county in 1899 and 1900. His Minnesota License was granted June 11, 1895, No. 427, Basic Science Certificate No. 3842.

Three children were born to the Angells during their residence in Canby. The first, Elizabeth, was born May 4, 1897; the second, Isabelle, born February 17, 1901, and the third, a boy, William Langdon, was born April 27, 1906.

After some years of practice in Canby Dr. Angell announced that he intended to take an extended vacation. To some of his friends he jokingly said he had made a lot of money in Canby and there wasn't any place to spend it; so he planned to stay away until it was all spent. The large home was sold, and all equipment, and when his affairs were all in order the entire family—parents, two children, Dr. Angell's parents who were visiting in Canby, and his two sisters, took the train for the family home in Indiana. From there they went to Europe, where Dr. Angell may have taken additional medical training.

Apparently Dr. Angell had indeed found a place to spend his money, for on his return to Canby the family started living as they had at first, in small quarters near his offices. He again built up a good practice, and lived in Canby until 1909 when he removed to Minneapolis. There he began specializing in eye, ear, nose and throat diseases. In 1928 he had an office at 602 Nicollet Avenue; in 1930 he was at 802 Besse Building, and 1934 at 608 Besse Building, Minneapolis.

Dr. Angell continued to practice until his last illness. He died December 11, 1935, in Minneapolis, from sarcoma of the perineum, also hypostatic pneumonia.

Dr. Angell was survived by his wife, Jessie L. Angell, and the children above named. Mrs. Angell died January 23, 1945.

Walter M. Beck was born at Delphi, Indiana, in 1862. He was educated in eastern schools and took his medical training at Ohio Medical College, from which he was graduated in 1886.

The only fact known about Dr. Beck's parents is that his father was a druggist. This appears from a story he told of having been detailed as a boy to catch the Thanksgiving turkey. He decided the proper way to kill a turkey was to give it chloroform, so he got some from his father's store and administered it. In due time the turkey made its appearance on the family table with all the trimmings; but when carved no one could eat it. Whether this story indicates Dr. Beck's early interest in medicine or his compassion for animals is debatable, but when grown he showed great love for animals and in the practice of medicine which he chose as a profession, he attained unusual skill.

Dr. Beck came to Hanley Falls in March, 1898, and according to its usual custom the *Clarkfield Advocate* introduced him in its issue of March 3, 1898:

> "Dr. W. M. Beck has moved into the Wilson Building and is prepared to receive calls any time. . . . We understand the doctor has had an extensive practice of twelve years, has diplomas from two leading eastern medical colleges and two hospitals, and for five years conducted a hospital of his own in Wisconsin, and we may judge from this that he is a physician of exceptional qualifications."

From other issues of the same paper we learn that his location just before coming to Hanley Falls was Shell Lake, Wisconsin, where he had a hospital. He had been married and divorced when he located in Hanley Falls and never remarried. He is not known to have given details of his early life. He was thought to be Irish; he had no church affiliations but was a member of the Masonic Lodge at Montevideo, Minnesota, and of the local Modern Woodmen of America. He was of medium height and heavy set, had red hair and blue eyes. He was a man of strong convictions, very outspoken, sometimes rough in his talk, but he was very popular and none of his oddities were held against him. He was a fluent and forceful speaker, a master of picturesque speech, and it was indeed a great occasion when he consented to appear on the program of the Hanley Falls Literary Society.

When the Spanish-American War broke out Dr. Beck enlisted in the hospital corps of the Thirteenth Minnesota. The *Clarkfield Advocate* says he went in as a private. The Thirteenth was one of three regiments raised in the state, and the only one to see active service. The Thirteenth Minnesota went to the Philippines and helped put down the insurrection. On the way home the regiment stopped at Japan, where Dr. Beck acquired a fine collection of silk ceremonial gowns which he proudly displayed as souvenirs of his service.

After his military service was completed Dr. Beck visited at his home, uncertain whether to return to Hanley Falls. He also purchased, or took up a claim to, some lands in North Dakota and spent some time there. Then he returned to Hanley Falls. The *Granite Falls Tribune* of March 15, 1900, reports:

> "Dr. Beck who was practicing medicine in Hanley Falls some two years ago but who left there and went to Manila as a private in the Thirteenth Regiment is now back at the old stand. Dr. Beck has had a great variety of experience in his profession while a soldier being for several months in full charge of the regimental hospital at Manila and previous to that was company doctor for "I" Company. He also distinguished himself as a sharpshooter while with the regiment at the front."

And the *Clarkfield Advocate* states:

> "The Editor passed a very pleasant hour at the office of Dr. Beck in Hanley Falls between trains last Saturday. The Doctor was with the Thirteenth Minnesota in the Philippines and has hundreds of photographic views of the country and people, which together with the souvenirs he brought back and his clear and concise descriptions, anecdotal relations, and general information, makes an hour with the Doctor seem almost as good as a trip to the Philippines. (March 12, 1900)."

The doctor gave the people of Hanley Falls and surrounding towns the benefit of his experiences in the Philippines. The *Advocate,* with strong political convictions, comments as follows:

> "Dr. W. H. Beck of Hanley Falls delivered his illustrated lecture on the Philippines to a large audience at Silver's Halls Thursday night. The woof of the lecture was historical but the warp was political. Notwithstanding this however, it was generally pronounced highly interesting and instructive. The views were very good. The doctor brought home many souvenirs of his campaign in the east which must be seen to be appreciated. (November 8, 1900)."

Dr. Beck was an expert marksman and was fond of hunting. He had a fine collection of guns and hunting dogs, the latter accompanying him on many of his calls. He enjoyed displaying his skill. On one occasion two tramps came up from the local "jungle" to get a pailful of beer. When they went back down the street toward their camp Dr. Beck got out a gun and put a neat hole through the pail they were carrying between them. The men were unaware of the shot until they saw the beer trickling out into the street. After everyone had a good laugh Dr. Beck took the men to the hardware store where they got a new pail and money to get another supply of beer.

Dr. Beck's skill with guns was the envy of every small boy in the village, and the town was full of boys with guns and dogs ambitious to be as good a shot and hunter as Dr. Beck.

Dr. Beck refused to let anything interfere with his doing what he thought was right in the practice of his profession. On one occasion he was called to a home where the patient, a boy, was very ill with pneumonia. Dr. Beck saw that it was necessary to "tap" the boy's chest at once, but the mother did not believe in "operations" and remonstrated. In spite of her protests Dr. Beck quickly put her out of the room and went about the business as if there had been no objection to it. The boy made a fine recovery.

On another occasion a farmer going home from town, where he had imbibed a little too freely, fell out of his buggy and the wheels passed over his head, gashing his cheek and cutting off an ear. He was brought to Dr. Beck's office at his home, a couple of men carrying the patient and another one carrying a jar of alcohol in which reposed the severed ear. Disregarding the man's drunken howls and protests Dr. Beck calmly shouted the man down, sewed up the gashed cheek and stitched the severed ear back on. The patient lived—with both ears—to a ripe old age and achieved a reputation as a sober and respected citizen.

In the early years of his practice in Hanley Falls Dr. Beck got around the country with horse and buggy, but as soon as automobiles became available he bought a car. He was not satisfied with the speed he could get from these early cars, and finally managed to have one geared up to much greater speed. Then he careened about the country on his calls with splendid disregard of life and limb.

In 1911, Dr. Beck moved from Hanley Falls to Clarkfield. His former patients continued to see him in this new location. Dr. Beck was greatly touched when a very old lady came by train from Hanley Falls to Clarkfield to see him rather than entrust herself to a new doctor.

About 1905, Dr. Beck had acquired an assistant, Miss Margaret Snee (she adopted the English version, Snow). She was a registered nurse who accompanied him on his calls, kept his office, looked after his meals and his living quarters and his dogs, and generally made herself useful in every department. At Clarkfield the doctor's office and living quarters were over the Clarkfield State Bank. He had a large practice and kept a set of books, but was careless about making collections. He had a large circle of friends and a splendid reputation as a doctor. He was interested in the welfare of the community, served as health officer and was active in the Humane Society. He was genial and friendly and popular with all classes.

During the summer of 1916, he performed an operation on himself, standing before a mirror. It was made necessary by an old injury, and Dr. Beck had not been able to get any physician to undertake the delicate surgery. The operation involved the removal of the upper third of his tongue. Much publicity was given to this feat by the papers of the Twin Cities as well as those of the county. The loss of a portion of his tongue affected his speech to a certain degree.

The doctor was a loyal fan of the Clarkfield baseball team, and then, as now, Clarkfield and Granite Falls were rivals in that sport. A game between the two towns was to be played at Granite Falls on August 20, 1916, and Dr. Beck took a party of friends, including Miss Snow, to see the game. On that occasion Clarkfield was the losing team, and when it appeared the game was lost Dr. Beck and his party left and started home. As usual, Dr. Beck drove the car about as fast as it would go; and about half way between Granite Falls and Clarkfield it went into the ditch. Dr. Beck was badly hurt but no one else was seriously injured. He was taken at once to St. Barnabas Hospital at Minneapolis, where he died on October 10, 1916.

The following obituary is taken from the *Clarkfield Advocate* of October 12, 1916.

"A gloom was cast over Clarkfield Tuesday morning when word was received that Dr. Walter M. Beck had passed away that morning at the St. Barnabas Hospital where he had been taken for treatment immediately after his automobile accident in which he was badly injured on Sunday, August 20.

The Doctor was unconscious for several days following his accident, but began to improve and it was thought he would recover. He received a severe setback about ten days ago, from a hemorrhage, and since that time has had several hemorrhages which weakened his system and he passed away Tuesday morning.

The Doctor had the best of medical care, some of the best physicians in the city looking after his case, and friends did everything they could to relieve his suffering but to no avail.

Dr. Beck came to Clarkfield in the year 1911 from Hanley Falls where he had been engaged in the practice of his profession for 16 years. The Doctor was a man who understood his profession and had a good practice. He was a bighearted man and did a great deal of charity work.

In his work as health officer and as a member of the Humane Society he made a number of enemies, but he did what he thought was right regardless of consequences. The Doctor was a man who was rather outspoken, but never beat around the bush and you always knew where he stood.

The Doctor was a sportsman and spent a great deal of time in the field. He was the owner of several good bird dogs and also owned some greyhounds and beagle hounds. He was a great reader, keeping abreast of the times by having a large number of the leading magazines and periodicals as well as medical journals and books.

We have very little data at hand for an obituary, and have been unable to secure any at the time of going to press. A letter was received here Wednesday morning that the Doctor had written Monday.

Dr. Beck was 54 years of age. He was a member of the hospital corps of the Thirteenth Minnesota in the Philippines. He was a member of the local M. W. of A. lodge and of the Masonic Lodge at Montevideo. His remains will be shipped to his boyhood home at Delphi, Indiana, for burial."

The nearest living relatives of Dr. Beck, according to the probate files of Yellow Medicine County, were his sister, Mrs. Alice B. Keith, of Indianapolis, Indiana, three nieces and a nephew. His personal effects included two trophies for marksmanship, five guns, one revolver, a gun cabinet, and four dogs.

(To be continued in the November issue)

President's Letter

THE AGE OF RETIREMENT

In August the House Ways and Means Committee met to hear testimony on four identical bills designed to provide means whereby the self-employed person could provide for his retirement through voluntary deductions from annual income.

Appearing in behalf of the American Medical Association were its president, Dr. Edward J. McCormick, and the director of the Bureau of Economic Research of the AMA, Frank G. Dickinson, Ph.D.

Dr. Dickinson's summary remarks express the reasoning behind the AMA's stand in favor of the law's passage. He states:

"When you think of the long history of the human race, of the centuries of pestilence, famines, wars and starvation that wiped out so many people that the average male or female didn't live long enough to have a cancer or heart problem, and then you look over the present records on vital statistics, you find we are living in a brand new era. . . . Medical progress, better food, better sanitation, better housing are keeping many people alive today. Indeed, the privilege of dying old is our national health crisis, our pension problem."

That pension problem, most acute when the age of retirement is reached without previous financial planning for it, can be solved to a great extent by the passage of a law on which the hearing was held in August.

The medical profession is not alone in actively supporting this measure. The list includes such varied groups as the dentists, veterinarians, lawyers, architects, farmers, salesmen, store owners, singers and others in the entertainment field. Those who testified on such a measure besides the American Medical Association, included the American Veterinary Medical Association, the Conference of Bar Association Presidents, the American Farm Bureau Federation, the National Society of Professional Engineers, and the Associated Actors and Artistes of America.

For years this inequity has existed. For years the law has allowed employers to purchase pension plans for employes to provide for comfort in retirement. Yet during all these years self-employed individuals have had to provide for their retirement out of income on which they have already paid income taxes.

Now the principle has been laid down, and the committee has heard much testimony in favor of passage of this legislation. But the fate of such a measure will lie in the hands of Congress after it has been reported favorably out of the committee.

The medical profession can be of great help by letting not only the committee members know their position, but also discussing the matter directly with their Congressmen while they are enjoying the current recess.

As Dr. Dickinson points out, "Until Congress takes this . . . step there will be a gaping hole in the new wall of protection that our government has thrown around our aging population."

It seems to your president that the prospect of saving up to $7,500 annually from your present income tax should create a little more interest and excitement than it has seemed to have caused.

President, Minnesota State Medical Association

Editorial

Arthur H. Wells, M.D., *Editor;* George Earl, M.D., Henry L. Ulrich, M.D., *Associate Editors*

THE CLINICIAN VS. THE SPECIALIST

YEARLY the Board of Internal Medicine has been certifying a group of men stating they have met the requirements and tests for the practice of Internal Medicine. They are, therefore, by the fiat of the Board termed internists.

How many of the men, who have spent three to five years in intensive study and a (*sic*) "research" or two—preparing for the ultimate test, become clinicians?

In the last ten years, a distinct cleavage has occurred between the two terms—internists and clinicians, at least in the minds of some of us.

At the time when mechanical and biochemical data were beginning to cluster about clinical medicine, Sidney Thayer made the trenchant observation that all the mechanical and biochemical aids in medicine have not shortened by one minute the period of making a good clinician.

Let us define the terms internist and clinician; that is, in their present connotation:

An *internist* is a board product, plus the co-operation of the medical schools. He is versed in all the newer gadgets—the biochemical tests, and it seems he is unable to make a diagnosis without these implements. His clinical sense has atrophied because of his dependence on these techniques—or he has never developed a clinical sense.

The *clinician* uses these gadgets and biochemical data only as a corollary to his clinical impression. In other words, he makes a diagnosis by history and physical examination and then uses these implements, mechanical and biologic, to classify rather than diagnose the condition. The clinician treats the patient—the internist treats the disease.

This, at least, is the impression of the older practitioners who have observed the younger men come into the wards and watch them operate when confronted with a clinical problem.

In 1937, Dr. Thomas Boggs, in his presidential address to The Association of American Physicians, called attention to several important points regarding Boards. He stated:

> "In these years of changes which affect all avenues of human endeavor it is not strange that the medical profession should feel the pressure of new philosophies of human relations. Of them, none is more powerful than the trend toward compulsion, by organized efforts, into a conformity called standardization.
>
> "To coordinate the scope and methods of these boards, a super board has been incorporated to direct the general trend of the standardization and centralize the efforts to put it in effect.
>
> "We then are face to face with the proposal to standardize the term Internist and certify such as are competent to fulfill the implication of that title. Let us consider for a moment the object of this proposed certification. It is according to the Board to determine who is properly an internist. I submit that no examination taken, together with any questionnaires, evidence of courses followed, theses and related documents can determine the matter. It cannot be reduced to a formula, the sum of the elements indicating the answer 'this person is an internist or not an internist.'
>
> "An internist's recognition as such really rests upon the consensus of opinion of his professional colleagues and trainers that he is so qualified. His proven value to his colleagues and patients is the only adequate test.
>
> "Thus, we may see the Boards of Trust and Administration of Hospital and Medical Schools surrendering their judgment and their responsibility under a type of urging which really amounts in plain words to a potent threat. The trend of the plan seems on close inspection to contain possibilities of methods which strike at the very root of medical education by substituting the extralegal demands of certification bodies for the considered plans and policies of those properly interested with medical education and training."

This prophetic insight of Boggs has come to pass. The medical schools and hospitals have sold out to the boards. The boards, in their efforts to standardize, have developed an educational scheme in which there is more pressure to pass an examination than for the training of a clinician.

All historical aspects in that the practice of medicine is a profession and not a business, all humanistic backgrounds have been swept aside in the mad scramble for standardization. This criticism is not true in individual instances, but it is true of the trend.

We older physicians are seeing the results of this bizarre situation in medical education. These are some of the reasons why some of us note the cleavage between an internist and a clinician.

—An Old Clinician

VICE VERSA

THE preceding editorial by "An Old Clinician" should be read without resentment by the younger internist who did not have his introduction to the field. Those who subscribe to our present method of training specialists in all fields, and in the establishment of boards to standardize formulae for acceptance, have not a few arguments in their favor, stemming from this mass production age in which we live. Perhaps the schedules of training should bring the younger men into closer contact with the disciples of the Sidney Thayers and the Thomas Boggses.

Medicine has extended its scope so widely in two world-shattering and tradition-disturbing wars that to supply the demand for recruits to all the special fields by the old apprenticeship contact method presently seems to be impossible. Furthermore, as physicians, we daily witness the fallacy of dependence upon the patient's or even our fellow physician's approval of our abilities. While stated requirements and examinations are a very imperfect way of determining ability, they are as of this date about the only measuring stick that can be applied and are certainly in general use; witness medical schools, law schools, West Point, Annapolis and the various licensing boards.

Having spent "three to five years in intensive study and a (*sic*) 'research' or two" does not make a clinician, in the "Old Clinician's" sense of the word. However, neither does graduating from medical school insure a good physician. Certainly, the various boards have encouraged a good deal of postgraduate study. How can it be said, therefore, that such postgraduate study would prevent the development of a clinician?

The distinction between an internist and a clinician is real. However, it would seem apparent that the Board of Internal Medicine has not created this situation. The three to five years of postgraduate study have some influence on a man's attitude, but they are only three to five years out of a total of approximately twenty-five years that have contributed to his development. Certainly, the other twenty years or so have had their impact in fashioning his outlook on life. It is questionable whether the medical profession or specifically those interested in internal medicine suffer any more in this regard than other physicians or other professions.

The technical information received in medical schools is no index as to whether a man is going to be a good clinician or not. It takes time to make a good clinician, but good clinicians have a certain fundament which is personal and individual and has to do only with intensive basic scientific study. One who is adequately prepared in this way, all other things being equal, would be a better clinician than one who is not trained in these subjects.

As a medical man becomes a more experienced clinician, he is more likely to use various gadgets and biochemical data intelligently and appropriately. It would not seem quite in order to argue with the medical schools and their teaching faculties by saying that a carefully laid-out planned course, including all the fundamental data with a satisfactory practice of medicine, should be greatly altered. On the other hand, medical schools should make an attempt to teach medical students more of the psychological processes, personality types, and explain the need of broad humanitarian, ethical, and cultural rapport.

The fact that the Boards of Trust and Administration of hospitals and medical schools may surrender their judgment and responsibility should not be used as an indictment of the Boards. It is a misuse of the purposes of the Boards and its correction should not lie in abolishing the Boards.

A Board Specialist

NALLINE® AND TENSILON®

DURING the past few months, two valuable drugs have been added to our armamentarium in combating respiratory depression.

Nalline® (N-allylnormorphine hydrochloride) has proven itself to be an antagonist to narcotic drugs such as morphine, methadone, Demerol®, Pantopon®, and Dromoran®,[1] Respiratory depression with rates of eight to ten respirations per minute may be doubled by 10 to 20 mg. of Nalline given intravenously. Dosage should not exceed 40 mg. Eckenhoff reports use of this drug in the prevention and treatment of narcotic induced asphyxia neonatorum. Nalline given to the mother ten minutes prior to delivery, or in-

---

1. Eckenhoff, J. E., Elder, J. D., and King, B. D.: The effect of N-allylnormorphine in treatment of opiate overdose. Am. J. M. Sc., 222:115 (July) 1951.

jected directly into the umbilical cord, produced prompt establishment of respiration. Eckenoff suggests 0.1 to 0.2 mg. in 2 cc. of normal saline for injection into the umbilical cord.[2] Unfortunately, Nalline is ineffective against barbiturate depression.

Tensilon® (3-hydroxyphenyl dimethylethyl ammonium chloride) is an excellent antagonist to the actions of d-tubucurarine, Flaxedil®, Metubine®, and Mecostrin®. Postanesthetic curare depression is successfully treated by the intravenous injection of 10 mg. of Tensilon.[3] Dosage should not exceed 30 mg. per injection, but may be repeated as necessary. Transient bradycardia may be prevented by the simultaneous injection of atropine in doses of 1/200 to 1/150 grain. A warning must be given against the use of Tensilon following depression from Anectine® (succinylcholine chloride), since their combined action may further enhance respiratory depression.

E. N. C.

---

2. Eckenhoff, J. E.: Hoffman, G. L., and Dripps, R. D.: N-allylnormorphine: An antagonist to the opiates. Anesthesiology, 13:242-251 (May) 1952.
3. Artusio, J. F., Riker, W. F., and Wescoe, W. C.: Studies on interrelationship of certain cholinergic compounds; Anti-curare action in anesthetized man. J. Pharm. & Exper. Therap., 100:227-237, 1950.

HOOVER, MANION COMMISSIONS ORGANIZED

With President Eisenhower looking on, members of the Hoover Commission on Government Reorganization and the Manion Commission on federal-state relations were sworn in at the White House on successive days (September 29 and 30). The Hoover group, as expected, elected former President Herbert Hoover as its chairman, a post he held under a similar study group several years ago. The commission also (1) authorized the chairman to set up nine task forces, including one on medical services, (2) appointed a staff that includes former Republican Rep. John Hollister as executive director, Frank Brassor of the Civil Service Commission as executive secretary and Harold Metz of Brookings Institution as research director, (3) set a tentative date at the end of 1954 for its report to Congress on what federal agencies might be abolished or consolidated, and (4) agreed to hold its next meeting November 16.

The Manion Commission expects to make its first report to Congress by next March 1 on federal functions, including health and medicine, that should be given back to states and communities. It authorized its chairman, former Notre Dame Law School Dean Clarence Manion, to select a small staff and report back in thirty days and agreed to set up research subcommittees on various fields to be studied during the next few months. The Hoover Commission has found quarters in the new General Accounting Office and the Manion group in the Department of Health, Education, and Welfare.

DISEASE-FREE "ISLANDS"

Disease-free "islands" are one of the greatest mysteries unsolved by modern science, according to Dr. Eugene H. Payne, of Detroit, a leading authority on tropical diseases.

Speaking on the General Electric Science Forum over radio station WGY, he pointed out that even though it is surrounded by malaria-infested areas, one Brazil town of 15,000 people has been absolutely free of this disease for at least a century.

Dr. Payne related that a number of the land-islands free of disease have been found in South America. Some of these areas are void of heart disease and hookworm though adjacent sectors report many such cases. Similarly, he said, insanity is practically unknown to Bolivians.

He said that many theories have been developed as to why this immunity exists, but none has as yet been proven.

Dr. Payne stressed the importance of studying these remote peoples while they remain static. Once they mingle with other groups, science will lose its chance to determine how they remain free from diseases which infest regions around them.

SECRETARY HOBBY EXPECTS SOCIAL SECURITY TO HAVE PRIORITY NEXT YEAR

Secretary Hobby believes that legislation to extend social security will have high priority with Congress when the next session opens in January. The proposal under consideration has the strong support of President Eisenhower. It was presented to Congress in the closing days of the last session, but too late for action. The plan would extend Old Age and Survivors Insurance to 10.5 million more persons, including *physicians,* dentists and many other groups of self-employed.

Mrs. Hobby forecast prompt action in two addresses. Talking at a Republican party rally at Kiamesha Lake, New York, she said that social security extension "will be one of the first matters" to come up for decision in January. She added: "This bill, which is in line with the President's campaign promises, will, if passed, give the advantages of social security to more than ten million Americans who at present are left out of the system. These include many self-employed professional people—doctors, lawyers, accountants, dentists, etc.; self-employed farm operators and hired farm workers; a large number of household workers not now covered, and possibly four million state and local government workers." A few days later, addressing the American Federation of Labor convention, Mrs. Hobby again stated that social security extension would be pressed by the administration.

A House Ways and Means subcommittee under chairmanship of Rep. Carl Curtis (R., Neb.) is continuing its study of the whole social security structure, preparatory to reporting to Congress shortly after the first of the year. Chairman Reed of the Ways and Means Committee introduced the social security extension bill "by request."

The Dean's Page

CHILD PSYCHIATRY

Since 1938, the Medical School has included in its total program of teaching, research, and service a full-time children's psychiatric service. Inasmuch as the first such full time service in the United States was established in 1930 at Johns Hopkins, Minnesota ranks as one of the pioneers in this phase of medical training.

Factors responsible for the inclusion of this important area of medicine in the total medical school program are: (1) the recognition that mental illness, because of its frequent occurrence, constitutes one of our major health problems, (2) the growing awareness that significantly large numbers of disturbed children, overlooked and untreated, contribute to later and more difficult psychiatric problems, (3) the knowledge that many complaints of children suggesting physical illness could be accounted for on the basis of emotional disturbances, and, (4) the gradual realization that the physician dealing with children is in a strategic position to develop a program of preventive mental health service.

Our psychiatric service for children was begun originally on an out-patient basis. It was soon apparent that many children referred to us needed to be admitted to the hospital for study and observation. This need was partially met in 1952 when an eleven bed in-patient service was made possible by legislative appropriation. Upon the completion of the current building program, a twenty-four bed service will be in operation.

An active teaching program has been in effect for the past fifteen years. Medical students graduating today have had more than thirty hours of instruction in the basic principles of child psychiatry. In addition the staff has spent considerable time in teaching graduate fellows, residents, nurses and others. Approximately fifty graduate fellows in psychiatry and pediatrics have had three months or more on the service since 1946. Nearly a dozen students from foreign countries have spent varying periods of time with us. The staff's community work includes active participation in the Center for Continuation Study Courses, as well as the regional courses sponsored by the Medical School, the State Medical Association and the State Board of Health. Conferences on problem cases with judges, juvenile court personnel, state and local social welfare workers, teachers and others constitute an important part of the teaching program.

Since 1938 over four thousand children have been studied or seen in consultation. In the first eleven months of operation of the in-patient service, over one hundred and twenty-eight children have been admitted for intensive study. An additional forty-two have been admitted for psychiatric study on the pediatric stations.

Children suspected of psychiatric difficulties are referred to the University Hospitals in accordance with policies previously described on this page. After acceptance and preliminary study in the Pediatric Out-Patient Department, plans are made as the situation indicates. In general, one of two plans is considered: (1) the patient and his family may be followed on an out-patient basis or (2) arrangements for hospital admission may be made.

Each child accepted is given a complete study which includes a detailed psychiatric and medical history, physical studies as indicated, complete psychological testing and individual work with both the child and his parents to define the significant factors responsible for the child's difficulty. Treatment is arranged in accordance with the findings. In every case the referring physician receives a report on his patient.

It has been gratifying to note the increasing number of physicians who are recognizing the early signs of maladjustment and dealing so effectively with them. This is the preventive approach to the mental health problem so urgently needed. It is our hope that the good beginnings of mutual co-operation between the physicians in our state and the Medical School in the interests of our children's mental health will continue.

Harold S. Diehl
Dean of Medical Sciences

Medical Economics

Edited by the Committee on Medical Economics
of the
Minnesota State Medical Association
George Earl, M.D., Chairman

CIO URGES MEMBERS TO ACTION FOR HEALTH

The Congress of Industrial Organizations, generally referred to as the CIO, has recently reaffirmed its active support for a compulsory national health insurance program, operated by the federal government.

In a recent issue of *Economic Outlook,* the CIO states that "under present political conditions . . ." progress toward better health "lies through collective bargaining, but our accomplishments through that channel do not lessen the need for government action." The article, "Union Action for Health," urges CIO members to act: "Through our unions we can continue to bargain for healthier and safer working conditions and for improved protection against the costs of hospitalization and medical care."

The CIO believes "that other measures will not make adequate medical care available to all the population," and on that stand alone, it supports compulsory health insurance.

While it loudly claims the benefits of national health insurance, and decries the "shortcomings" of present prepayment benefit plans, the CIO tells its members to work for certain goals, some of which would be largely ineffective or even nonexistent should a national health insurance program be started. Recommended methods for unionists to improve health services are: collective bargaining, establishing their own health institutes, encouraging consumer controlled co-operatives, as citizens, to work with others to improve local health facilities, and by supporting state legislation. Some of those objectives are admirable in themselves, but others are entirely incompatible with the union's policy of support for national health insurance.

NEW PROPOSALS SENT TO HEALTH INSURANCE PLAN

Because of certain obvious facts about the Health Insurance Plan of Greater New York, the Medical Society of the County of Kings has found it impossible to endorse the group practice prepayment program, popularly known as H.I.P.

The longstanding controversy took a new turn recently when Dr. Alfred P. Ingegno, president of the Medical Society of the County of Kings, wrote a letter to H.I.P. offering six "constructive proposals" which would make it possible for the borough medical societies to endorse this group practice prepayment program.

Break Tight Monopoly

In suggesting that H.I.P. offer free choice of doctors to its subscribers, the president admitted that "it is going to hit present H.I.P. doctors right in the pocketbook. It will mean surrendering a tight little monopoly." He added, however, that "the public has a right to hope that H.I.P. will be willing to make that sacrifice."

The "put up or shut up" attitude was coupled with the following six proposals which would improve the plan, according to Dr. Ingegno:

1. That H.I.P. offer a "free choice" contract in addition to its present contract. A subscriber then could choose his own doctor or medical group.

2. That H.I.P. allow its subscribers to go to *any* medical group ready to give "comprehensive" care, not just groups chosen by H.I.P. officials.

3. That H.I.P. use "dignified" advertising methods.

4. That H.I.P. urge the city to pay half the premium of *any* medical care plan democratically chosen by a city employe group, even if it is not H.I.P.

5. That H.I.P. urge the city to pay half the *hospitalization* insurance of city employes, even if they don't join H.I.P.

6. That H.I.P. put more "practicing physicians" on its board of directors.

Evades Issues

Previously, H.I.P. had accused the medical profession in New York of being against medical care and against group practice, in view of their objection to some parts of the H.I.P. plan. In making public his latest proposal letter, Dr. Ingegno pointed out that the accusation is "a fake and an evasion of the real issues, which involve questions of broken ethics and attempted monopoly of medical practice."

The entire question now awaits an answer and possible action by officials of the Health Insurance Plan of Greater New York, and the outcome should be of great interest to the medical profession throughout the country.

MAGAZINE URGES REVIEW OF VOLUNTARY INSURANCE

A direct and critical view and review should be taken of the entire voluntary prepayment health insurance situation in the country, according to the publication *Medical Economics.* In a reprint of a chapter from his book, the editor states:

> "The time has come for a dispassionate analysis of voluntary health insurance in all its phases—including a long, hard look at both its strengths and its weaknesses."

Future at Stake

The editor states that one medical observer questioned about voluntary health insurance felt the importance of a long, hard look to be so great that

> "The future of medicine and, to a degree, the future of democracy will be shaped by what happens in the voluntary health insurance field. This whole subject and its role in American life must be explored with infinite care. Had we approached it more thoughtfully in recent years, some of the forces that now threaten our traditional democratic process would not exist."

In order to make such a comprehensive review of so large a subject, three main questions must be kept in mind, according to the editor. They are: What do we really mean when we speak of voluntary health insurance? What are we trying to accomplish with it? Can it do the job?

The editor attempts an answer to the first question in general terms. He states:

> "Such insurance is basically a means of cushioning people against the economic shock of unbudgeted illness costs. When sickness strikes then, it can be paid for without either relying on charity or depleting the patient's resources. . . .
>
> "Such insurance can't reduce the cost of medical care to the public at large. But it does minimize the immediate cost to the individual by distributing it. Because prepayment makes medical bills easier to meet, it also helps stabilize the finances of subscribing members and of participating doctors and hospitals."

Broad Interest Noted

The phenomenal growth of voluntary health insurance in all forms over the past ten or more years attests to the fact that more and more people desire protection of some kind. And, that growth also points out the fact that if voluntary health insurance is not meeting all needs adequately, then something should be done to find out why, what is wrong and what can be done to improve it. Because it is so very young in actuarial experience, voluntary health insurance cannot be expected to be perfect in all respects. But a healthy look in the mirror, while possibly a little disconcerting, would most certainly prove very educational, and undoubtedly provide a springboard to action.

The magazine editorial states:

> "Voluntary health insurance programs in operation today have been organized by medical societies, hospital associations, private insurance companies, community groups, co-operatives, labor unions, and industrial firms. This very listing indicates the variety of local community interests that have been moved to social action."

Enrollment Trends Up

The rapid increase in enrollment in voluntary health insurance plans over the years has been concentrated largely among employed groups in industrial areas. But expansion is gradually becoming the by-word. According to the article, "Until most of the well population is covered by prepayment plans, the price of providing broad service for those who fall seriously ill must necessarily remain high."

One source from which the editor quotes has this to say:

> "Unless the program can be extended rapidly to cover the rest of the population, public dissatisfaction with

mounting medical bills may at any time create the illusion that government health insurance is the lesser, instead of the greater, evil. This eventuality is independent of the course of political events."

Dr. Louis H. Bauer, recent president of the American Medical Association, is quoted as saying the following about future enrollment:

> "I believe, eventually, about 100 million people will be covered by voluntary health insurance. This will be sufficient, as 25 million now receive their medical care in whole or in part from the government; 10 million do not believe in medical care, preferring to buy what they think they require over a counter or by patronizing cultists; about 5 million are indigents whose medical care is a local responsibility; and about 10 million do not appear to be interested in insurance at all."

BASIC SCIENCE RESEARCH GETS FUND GRANT

The American Medical Association recently received a grant of $15,000 for conducting research in the basic medical sciences. The fund, from the William Volker Charities Fund of Burlingame, California, will be used for studies in the various basic sciences, such as anatomy, physiology and embryology.

The AMA's Committee on Research, through its sub-committee on grants-in-aid, will be responsible for allocating the funds, chiefly to individual researchers. According to a recent release from the AMA, "it has been felt that too much attention has been paid to clinical applications of disease treatment and not enough to action of the human body's normal cells and organs. Grants from the William Volker Fund should help to stimulate a more realistic balance between these two important phases of medicine."

PRESIDENT RECOMMENDS SOCIAL SECURITY INCREASE

Extension of social security coverage to about ten and one-half million more persons was recommended recently by President Eisenhower. The President submitted to Congress the recommendations of Mrs. Oveta Culp Hobby, secretary of the Department of Health, Education and Welfare. The new groups to be covered would include over 3 million self-employed farmers; some 3 million more farm workers and domestic workers than are now covered; and about a half million self-employed persons including doctors, dentists, lawyers, architects, accountants and other professional people. The recommendations would also cover almost 4 million members of state and local government retirement systems, under voluntary agreements between the states and the federal government if the members of the system vote in favor of coverage by a two-thirds majority.

A bill to cover these recommendations has been introduced into Congress by Representative Reed, chairman of the House Ways and Means Committee, who said that although he introduced the bill, he would not give it blanket endorsement. He felt that opinion on the merits of the bill should be withheld until recommendations of the subcommittee studying the entire social security system were completed and submitted to Congress. This report is expected to be submitted to the full House Ways and Means Committee by the end of the year.

THE MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

230 Lowry Medical Arts Building
Saint Paul, Minnesota
E. M. JONES, M.D., *Secretary*

MINNEAPOLIS BARTENDER AND ASSOCIATE SENTENCED FOR CRIMINAL ABORTION

Re. State of Minnesota vs. Virginia Mae Johnstone and Edward A. Berg

On August 4, 1953, Mrs. Virginia Mae Johnstone, twenty-nine years of age, 2229 13th Ave. So., Minneapolis, was sentenced by the Hon. Earl J. Lyons, Judge of the District Court of Hennepin County, to a term of not to exceed two years in the Women's Reformatory at Shakopee for the crime of abortion. Judge Lyons stayed the sentence and placed the defendant on probation for a period of two years.

On September 28, 1953, Edward A. Berg, a thirty-eight-year-old bartender of 2546 Dupont Ave. So., Minneapolis, was sentenced by the Hon. Levi M. Hall, Judge of the District Court of Hennepin County, to a term of not to exceed four years in the State Prison at Stillwater on a charge of abortion. The sentence was stayed for two years, however, and the defendant was placed on probation.

Both defendants were charged jointly with having committed the crime of abortion on June 27, 1953. Subsequently, on July 1, 1953, Mrs. Johnstone entered a plea of guilty to the charge before Judge Lyons. Mr. Berg, who entered a plea of not guilty on that date, later changed his plea to guilty before Judge Hall on August 25, 1953.

The defendants, neither of whom has a license to practice any form of healing in the State of Minnesota, were arrested following the hospitalization on June 29, 1953, of a nineteen-year-old unmarried Minneapolis girl. Subsequent investigation disclosed that the defendant Johnstone, who performed the abortion by means of using a solution of water, castile soap and turpentine, received $100 for performing the abortion. She admitted having performed two prior abortions. The defendant Berg, who acted as the contact in the case, received $150 for his services.

✦ Reports and Announcements ✦

NATIONAL SOCIETY FOR CRIPPLED CHILDREN AND ADULTS

Dr. Edward J. McCormick of Toledo, Ohio, president of the American Medical Association, heads a list of distinguished authorities scheduled to speak on the care, treatment and training of crippled children at the 1953 Annual Convention of the National Society for Crippled Children and Adults, November 12-14, at Chicago's Palmer House.

Another prominent personality will be Dr. Frances R. Horwich, Chicago, leading child development authority who, as "Miss Frances," has made the "Ding Dong School" a nationally famous program on television. Dr. Horwich will be principal speaker at the annual parents institute.

Dr. Henry H. Kessler, medical director of the Kessler Institute for Rehabilitation, West Orange, New Jersey, and counselor in rehabilitation to the National Society, will head up a panel on rehabilitation at the convention.

In addition to other outstanding speakers the convention program will include general sessions, seminars, exhibits, demonstrations, workshops, social events and other features planned to appeal to all rehabilitation workers, volunteers, and parents of crippled children who will attend the convention.

Dr. William T. Sanger, president of the National Society, will preside at this year's convention marking the Society's thirtieth annual meeting and thirty-second year of service to the nation's handicapped.

Architecture and its adaptations to meet the needs of the crippled will be featured for the first time at this year's three-day meeting. A forum on architectural planning for public buildings, schools and hospitals will be included. A special architectural exhibit will contain a model rehabilitation center developed by Salmon and Salmon, architectural consultants of the National Society, and sketches and blueprints from the U. S. Public Health Service, the American Hospital Association, and the Easter Seal Societies.

A traditional convention feature, a panel of distinguished persons who have outwitted their handicaps to become productive and successful members of society, is also planned for the meeting.

Recreation will be considered from the angle of planning recreational programs as part of the total program in hospitals and schools. Special emphasis in the recreation workshop will be given to the needs of the homebound.

Social functions will include an open house, luncheons and the annual President's dinner. Music will be provided by the Valparaiso University Choir of Valparaiso, Indiana.

* * *

For outstanding achievement and service through its nationwide program of employment for the crippled, the National Society for Crippled Children and Adults has been awarded the Distinguished Service Certificate by the President's Committee on Employment of the Physically Handicapped.

The award, which is the highest honor that can be conferred upon a co-operative group by the committee, was announced by Vice-Admiral Ross T. McIntire, chairman, for the nation's capitol.

Citations were also given to the Disabled American Veterans Service Foundation, Washington, D. C.; Goodwill Industries of America, Inc., Washington, D. C.; and *The Saturday Evening Post, Philadelphia.*

The Easter Seal Society was cited for pioneering many new programs and projects for the handicapped, and for the public attention its activities have focused on the national program to employ the physically handicapped. This service has been carried out by the National Society through its vast network of more than 2,000 state and local Easter Seal affiliates located in every state in the nation, District of Columbia, Alaska, Hawaii, and Puerto Rico.

Dr. William T. Sanger, of Richmond, Virginia, is president of the National Society. Headquarters of the Easter Seal Society are at 11 S. LaSalle Street, Chicago, with Lawrence J. Linck, executive director.

The National Society each year grants fellowship awards to qualified counselors, guidance teachers and other professional persons for specialized training in the placement of the cerebral palsied and other severely handicapped workers. This training is designed to encourage public and private agencies to increase their services for the handicapped and to inform industry of the vast national resource available in the employment of the disabled.

The National Society also operates a free National Personnel Registry and Employment Service, a personnel clearing house to ensure the best use of services of those qualified by training, experience and interest in work with the physically handicapped.

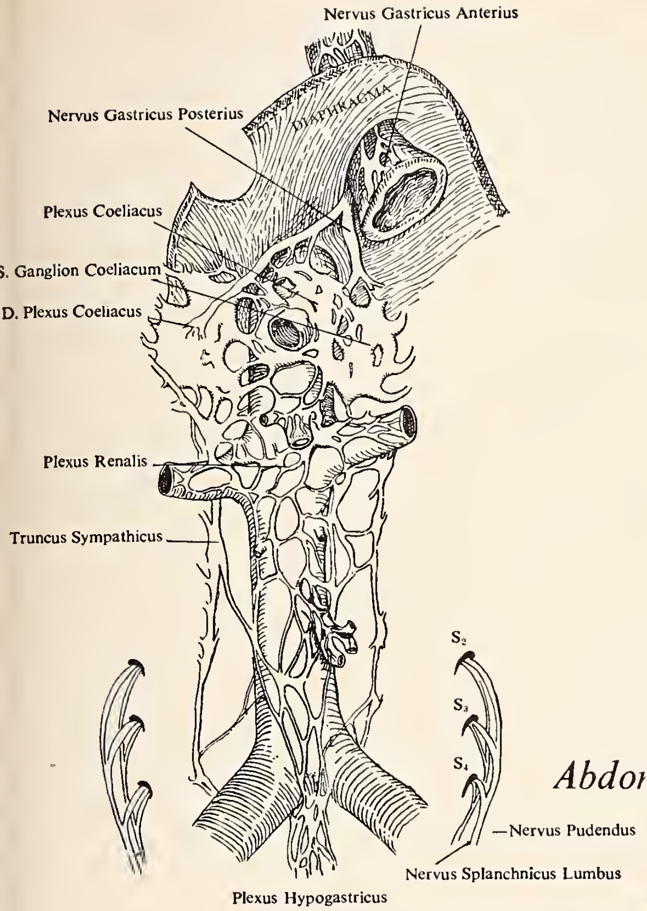
INTERNATIONAL SYMPOSIUM ON CARDIOVASCULAR PHYSIOLOGY AND SURGERY

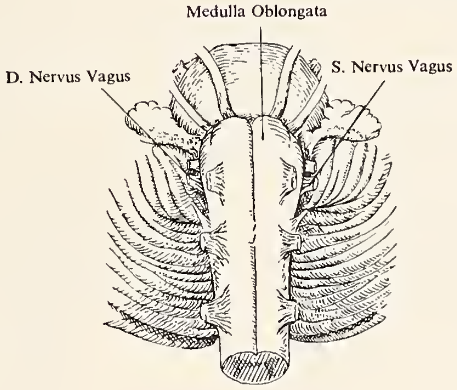
Recent advances in cardiovascular (heart and blood vessels) physiology and surgery was the subject of an international symposium at the University of Minnesota September 14-16, 1953. Medical specialists from three foreign countries, fourteen states and Canada spoke at sessions in Scott Hall auditorium.

The conference was sponsored by the University and the Minnesota Heart Association. In November, 1951, they co-operated in presenting an international symposium on rheumatic fever, also held at the University.

Five doctors from abroad—Clarence Crafoord, Sabbatsbergs Hospital, Stockholm; Domingo Gomez, Havana; Torgny Sjostrand, Karolinska sjukhsuet, Stockholm; Olle Snellman, University of Uppsala, Sweden; and Erik Wetterer, University of Munich, Western

(Continued on Page 1086)


Nervus Gastricus Anterius
Nervus Gastricus Posterius
DIAPHRAGMA
Plexus Coeliacus
Ganglion Coeliacum
D. Plexus Coeliacus
Plexus Renalis
Truncus Sympathicus
S2
S3
S4
—Nervus Pudendus
Nervus Splanchnicus Lumbus
Plexus Hypogastricus


Medulla Oblongata
D. Nervus Vagus
S. Nervus Vagus

Central origin of the vagus nerves (parasympathetic)

Abdominal autonomic plexus (sympathetic)

Control of Gastric Motility and Spasticity in Peptic Ulcer with Banthīne®

"The need[1] for suppressing gastric motility and spastic states is . . . fundamental in peptic ulcer therapy. Since the cholinergic nerves are motor and secretory to the stomach and motor to the intestines, agents capable of blocking cholinergic nerve stimulation are frequently used to lessen motor activity and hypermotility."

Banthīne[2] "has dual effectiveness; it inhibits acetylcholine liberated at the postganglionic parasympathetic nerve endings and it blocks acetylcholine transmission through autonomic ganglia."

It has been shown[1] to diminish gastric motility and secretion significantly as well as intestinal and colonic motility.

The usual schedule of administration in peptic ulcer is 50 to 100 mg. every six hours, day and night, with subsequent adjustment to the patient's needs and tolerance. After the ulcer is healed, maintenance therapy, approximately half of the therapeutic dosage, should be continued for reasonable assurance of nonrecurrence.

Banthīne® (brand of methantheline bromide) is supplied in: Banthīne ampuls, 50 mg.—Banthīne tablets, 50 mg.

It is accepted by the Council on Pharmacy and Chemistry of the American Medical Association.

1. Zupko, A. G.: Pharmacology and the General Practitioner, GP 7:55 (March) 1953.
2. McHardy, G. G., and Others: Clinical Evaluation of Methantheline (Banthīne) Bromide in Gastroenterology, J.A.M.A. *147*:1620 (Dec. 22) 1951.

SEARLE Research in the Service of Medicine

INTERNATIONAL SYMPOSIUM ON CARDIOVASCULAR PHYSIOLOGY AND SURGERY

(Continued from Page 1084)

Germany—lectured on circulation, pressure and flow and cardiovascular surgery.

Differential diagnosis of congenital heart disease, diseases of the mitral and aortic valves, application of mechanical heart and lungs in cardiac surgery, hypothermia in cardiac surgery, septal defects and pulmonary stenosis were among the topics which were discussed at the conference.

Dr. William F. Hamilton, professor of physiology at the Medical College of Georgia, Augusta, Ga., delivered the annual George E. Fahr lecture at 8 p.m., September 14, in Scott Hall auditorium. He outlined "The Physiology of Congestive Failure of the Circulation."

AWARD FOR OUTSTANDING RESEARCH IN THE FIELD OF INFERTILITY

The American Society for the Study of Sterility announces the opening of the 1954 contest for the most outstanding contribution to the subject of infertility and sterility. The winner will receive a cash award of one thousand dollars, and the essay will appear on the program of the 1954 meeting of the Society. Essays submitted in this competition must be received not later than March 1, 1954. For full particulars concerning requirements of this competition, address The American Society for the Study of Sterility, c/o Dr. Herbert H. Thomas, Secretary, 920 South 19th Street, Birmingham, Alabama.

The author should append on a separate sheet of paper a short biographical sketch of himself and include a photograph to be used in the necessary publicity should he be the winner of the award.

AMERICAN COLLEGE OF PHYSICIANS

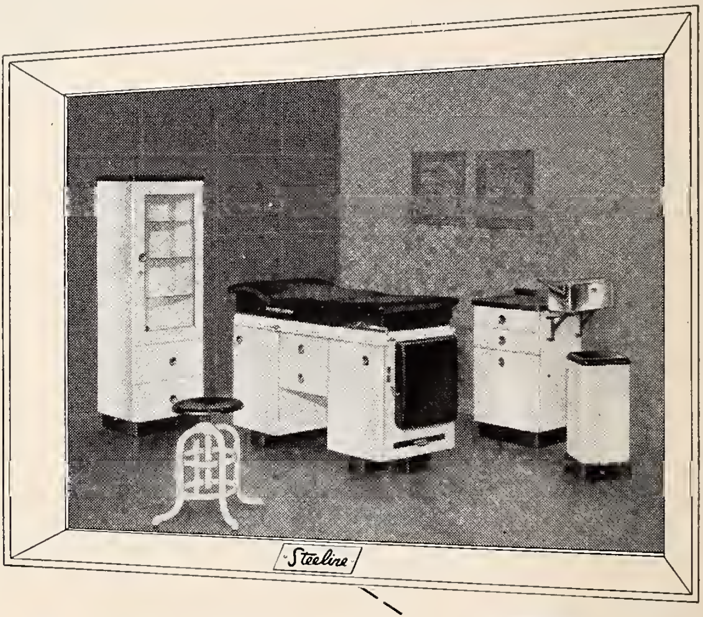
The Midwest Regional Meeting of the American College of Physicians will be held in Milwaukee, Wisconsin, November 21, 1953, at the Hotel Schroeder. There are 875 College members represented by the states of Illinois, Indiana, Iowa, Minnesota, and Wisconsin.

A scientific program of twenty-two papers of fifteen minutes each and a Clinico-Pathological Conference has been arranged. A luncheon at noon, banquet and entertainment in the evening, as well as a luncheon and entertainment at noon for the ladies are on the schedule. All physicians, members of the College and non-members are invited to attend. There is no registration fee.

Francis D. Murphy, M.D., F.A.C.P., Milwaukee, is General Chairman and Joseph W. Rastetter, M.D., F.A.C.P., Milwaukee, Chairman of Arrangements.

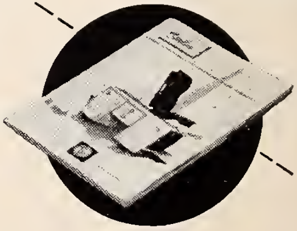
---

design achievement in treatment room furniture



New Steeline has gone through fifteen years of gradual development to reach the fine degree of design perfection it now has. The suggestions of scores of physicians and the engineering skill of our own production plant have been combined to produce this outstanding treatment room equipment. New features such as foam rubber cushioned contour top, magnetic door latches, concealed paper sheeting holder, superb color finishes, etc., are all fully described and illustrated in our new full-color brochure—send for yours today.

FREE . . . 16-page full-color brochure complete with specifications — send for your copy today.



A. S. ALOE COMPANY OF MINNESOTA • 927 Portland Avenue • Minneapolis 4, Minnesota

CANCER SOCIETY GIVES UNIVERSITY OF MINNESOTA $75,000 FOR RESEARCH WORK

Fifteen cancer research projects will be carried on at the University of Minnesota during the next year under terms of a $75,000 grant from the American Cancer society. Announcement of the award was made by Dr. C. G. Uhley, Crookston, president of the Minnesota division of the society.

According to the University's cancer co-ordinator, Dr. Bernard Zimmermann, assistant professor of surgery, the society funds will be used to support research in almost every department of the medical school: cancer biology, physiology, gynecology, the tumor clinic, pathology, biological chemistry, radiation therapy, cyto-chemistry, radiology, surgery, anatomy and medicine.

Most of the projects are relatively new and some are part of large-scale investigations which will continue for years. Three of them are concerned with hormonal aspects of cancer. Subjects of these scientific studies and researchers who will conduct them are:

Role of the pituitary gland in breast and adrenal tumors in mice: Dr. Carlos Martinez, assistant professor of cancer biology.

A study of the chemistry of cancer and the role of sulfhydryl compounds: Isaac M. Kolthoff, chief of the department of analytical chemistry, and Dr. Maurice B. Visscher, head of the department of physiology.

Radium treatment of cancer of the uterus: Drs. Roy G. Holly, assistant professor of obstetrics and gynecology, and John L. McKelvey, head of the department of obstetrics and gynecology.

Statistical studies in the tumor clinic and follow-up of patients: Drs. Zimmermann and Claude R. Hitchcock, director, Cancer Detection Center.

Studies of human cancer with newly developed methods: Drs. James R. Dawson, head of the pathology department; Joel G. Brunson, medical fellow in pathology; Robert Hebbel, professor of pathology, and Gunnbejor Aurebeck, resident in pathology.

Studies of hormones in human and animal cancer: Drs. John J. Bittner, professor of cancer biology; W. D. Armstrong, head of physiological chemistry, and Saul L. Cohen, associate professor of physiological chemistry.

Irradiation treatment of lymphoid tumors: Dr. Charles M. Nice, Jr., instructor in radiology.

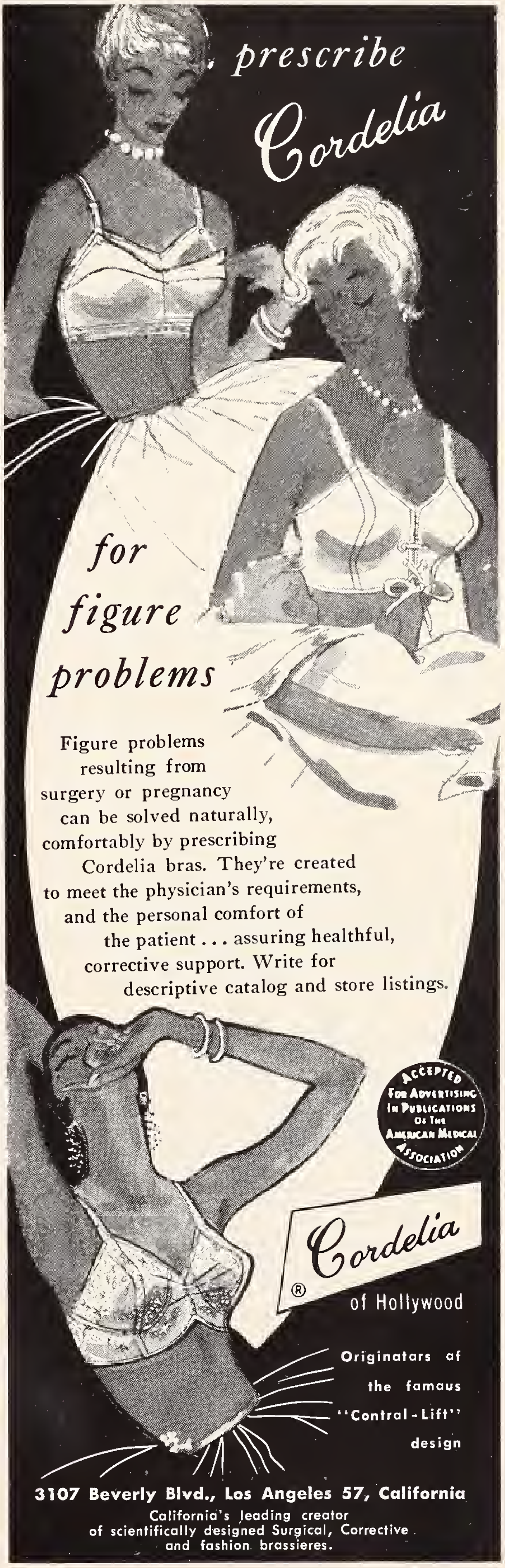
Study of normal and cancerous stomachs by new physical methods: Dr. David Glick, professor of physiological chemistry.

Methods for earlier diagnosis of lung cancer: Drs. Leo G. Rigler, head of the department of radiology, and Richard L. Varco, professor of surgery.

Study of x-ray effects on tumor-bearing tissues: Drs. K. W. Stenstrom, director of radiation therapy; Halvor Vermund, research associate; James F. Marvin, assistant professor of radiology; Robert A. Ledner, fellow in radiology, and Donn G. Mosser, instructor in radiology.

Search for an intravenous dye as a cancer detection agent and technical problems in gastric and esophageal cancer surgery: Drs. Owen H. Wangensteen, chief of surgery; William D. Kelly, research fellow in surgery, and Edwin L. Brackney, medical fellow in surgery.

A study of dietary production of anemia and pre-can-



prescribe
Cordelia
for figure problems
Accepted for Advertising in Publications of the American Medical Association
Cordelia ® of Hollywood

Figure problems resulting from surgery or pregnancy can be solved naturally, comfortably by prescribing Cordelia bras. They're created to meet the physician's requirements, and the personal comfort of the patient . . . assuring healthful, corrective support. Write for descriptive catalog and store listings.

Originators of the famous "Control-Lift" design

3107 Beverly Blvd., Los Angeles 57, California
California's leading creator of scientifically designed Surgical, Corrective and fashion brassieres.

cerous conditions in swine: Drs. Jay Sautter, associate professor of veterinary medicine; Hitchcock, and J. Bradley Aust, National Cancer Institute trainee.

Clinical, endocrine and metabolic studies relating to cancer surgery and surgical removal of adrenal glands: Drs. Zimmermann, Hitchcock, and Henry S. Bloch, research associate in surgery.

A study of the effects of exhaust fumes from a gasoline engine and the fumes from heated tar on the incidence of lung cancer in mice: Dr. Hitchcock.

Treatment of breast cancer with hormones and radiation: Dr. Byrl J. Kennedy, assistant professor of medicine.

This is the largest institutional grant the American Cancer society has ever made to the University, (An institutional grant is given to a university or college to be used as the institution thinks best. The society also makes grants for specific research projects.)

LEO G. RIGLER LECTURE

The annual Dr. Leo G. Rigler Lecture for 1953 will be delivered Wednesday, October 28, 1953, at 8:15 p.m. in the Auditorium of the Museum of Natural History, University of Minnesota. The lecture will be given by Dr. Robert McWhirter, Professor and Chief of the Department of Radiotherapy, Royal Infirmary, Edinburgh, who will speak on "Simple Mastectomy and Postoperative Radiation for Carcinoma of the Breast."

SERVICE BROWN & DAY INC SAINT PAUL U.S.A. QUALITY

For

Professional Supplies

and

Service

BROWN & DAY, INC.

St. Paul 1, Minnesota

HOMECOMING CLINIC TO BE HELD AT UNIVERSITY OF MINNESOTA

The Minnesota Medical Alumni Association invites all physicians to attend the Homecoming Clinics at the University Hospital on November 6 and 7, 1953. The program will get under way at 11:45 a.m. on Friday, November 6, with the Staff Meeting of the University Hospital. Luncheon will be served and the special Homecoming program will feature Dr. O. J. Campbell, president of the Minnesota State Medical Association, who will discuss "The Responsibilities of Organized Medicine." This will be followed by the annual meeting of the Minnesota Medical Alumni Association and the Homecoming Clinics themselves will be held from 2:00 to 4:30 p.m. on Friday and from 9:00 to 11:30 a.m. on Saturday, November 7. The Homecoming Game, Minnesota versus Indiana, will go on at 1:30, Saturday, in Memorial Stadium.

MINNESOTA ACADEMY OF GENERAL PRACTICE

The Minnesota Academy of General Practice will stage its annual Fall Refresher Day at the Hotel Lowry in St. Paul, Wednesday, November 4, 1953. According to Dr. C. C. Cooper of St. Paul, president of the organization, a stimulating and important day-long program has been arranged for the occasion.

CONTINUATION COURSES

Dermatology will be the subject of a continuation course for physicians which will be presented by the University of Minnesota at the Center for Continuation Study next November 19 to 21. Intended primarily for physicians engaged in general practice, the course will stress the recognition and management of the common skin disorders. The program will be presented under the direction of Dr. H. E. Michelson, Professor of Medicine and Director of Dermatology, and the remainder of the faculty will be drawn from the University of Minnesota Medical School and the Mayo Foundation.

* * *

The University of Minnesota announces a continuation course in *Obstetrics for General Physicians* which will be held in the Center for Continuation Study on December 3 to 5, 1953. Emphasis will be placed on recent advances in the field which have practical clinical application. The course will be presented under the direction of Dr. John L. McKelvey, Professor and Head, Department of Obstetrics and Gynecology.

VA HOSPITALIZING MORE NON-SERVICE CONNECTED CASES

Latest statistics from Veterans Administration show the agency is reducing its lists of service and non-service connected cases awaiting hospitalization. In August, 1952, service-connected cases waiting admission totaled 143. During July and August of this year they numbered only two. At the same time VA is getting more and more non-service connected cases into its hospitals. In August, 1952, VA listed as waiting hospitalization 22,341 cases it described as "other than disabilities adjudicated service-connected." By July of this year only 20,370 were still waiting treatment, and in August only 17,874.

Woman's Auxiliary

MEDICAL SUPPLIES NEEDED FOR SICK KOREAN CHILDREN

Truce in Korea has not reduced the overwhelming sickness, suffering and poverty among the Korean people and the need for medical supplies of all sorts, especially drugs and medicines, is still far greater than relief agencies have been able to meet.

This is the testimony of all letters from those who are helping on the front lines and from official observers who have returned recently from tours of inspection.

Collection of sample drugs by doctors' wives has therefore become more important than ever, according to Mrs. H. O. Beek, of St. Paul, who has directed a successful collection this summer for the Ramsey County Medical Society auxiliary, and auxiliary members all over the state are urged to step up their efforts to assist in the work.

In Pusan, for example, a staggering number of children estimated at more than 60,000 a month by William C. Bullitt, former United States ambassador to Russia, are cared for at a single clinic conducted by fifteen Maryknoll missionary sisters. "I have just returned from Korea," Mr. Bullitt said recently in a letter published in the *New York Times*. "Before the communist attack, Pusan was a poor town of less than 300,000. Today it is submerged by more than 1,000,000 refugees. There is no new housing. The refugees build shacks of old boxes, tin cans and paper. The winds chill their huddled undernourished bodies. Disease, led by tuberculosis, runs through their swarming streets. Into these streets fifteen Maryknoll sisters moved in the spring of 1951. All were trained physicians and nurses and they set up their clinic at the top of a teeming alley. There, by working eighteen to twenty hours a day, they treat an unbelievable average of nearly 2,000 sick children a day. . . . They stand or lie on the ground for hours awaiting treatment. . . . No work of service that I have ever seen seemed to me so surely blessed of God."

It is to the Maryknoll sisters in Pusan that the Ramsey Auxiliary has sent its collection which amounted to 500 pounds this summer. Aid is given to all who come regardless of religion or lack of it, Mrs. Beek reports, and the need for help will be tremendous for a long time to come.

Any other Auxiliary or auxiliary member who is interested is urged to write to Mrs. H. O. Beek, 900 Goodrich Avenue, St. Paul, for information and shipping instructions.

RAMSEY AUXILIARY TO VISIT RED FEATHER AGENCIES

As the Red Feather campaign will be uppermost in the thoughts of many members of the Ramsey County Medical Auxiliary at the time of their first general meeting on October 26, a program has been arranged that will give them an interesting firsthand view of Community Chest agencies.

Following a luncheon at Town and Country Club, the Auxiliary will go on a "Come and See" tour of Red Feather supported agencies including Booth Memorial Hospital and the Merriam Park Community Center. An innovation planned for the Board of Directors' meetings this year is to have board members work on cancer dressings during their business meetings.

The Ramsey County Medical Society Auxiliary has sent out approximately 500 pounds of sample medicines, clothing and other items this summer for use of the Maryknoll Sisters in their medical and nursing service among sick and needy Koreans.

Mrs. Clyde L. Smith

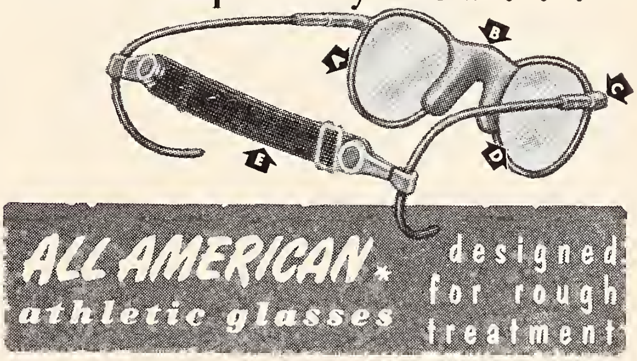
Hall, Anderson & Nordehn

PRESCRIPTION PHARMACY
BIOLOGICALS
PHYSICIANS' SUPPLIES

SAINT PAUL, MINN.

LOWRY MEDICAL ARTS BUILDING
TELEPHONE: CEDAR 2735

The completely new . . .



A. EXTRA STURDY ALL-METAL FRAME
B. "CUSHION FIT" SHOCK ABSORBENT RUBBER NOSE PIECE
C. ENDS COVERED TO PROTECT OTHER PLAYERS
D. SAFETY PRESCRIPTION LENSES WITH HIGH BASE CURVE
E. EXPANSIBLE, ADJUSTABLE "GLASS GARD"* HEADBAND

- One Price for All Prescriptions up to and Including 7 Diopters—Case Included
- Order Complete Sample Available at Nominal Cost or Write for Further Information

*Pat. Pend.

Since 1913 Benson OPTICAL COMPANY EXECUTIVE OFFICES
MINNEAPOLIS, MINNESOTA

Complete Laboratories in Minneapolis and Principal Cities of Upper Midwest

In Memoriam

JOSEPH P. FLYNN

Dr. Joseph P. Flynn died August 21, at the age of seventy-nine, at his home, 7299 Oak Grove Boulevard in Richfield. He had practiced medicine for forty-nine years in the Minneapolis area before his retirement five years ago.

Dr. Flynn was born in Stillwater and received his pre-medical education at St. John's University at Collegeville and at Notre Dame. He was graduated in medicine at Rush medical college in 1900 and interned at St. Mary's Hospital in Minneapolis. He settled permanently in Minneapolis after practicing for a brief period in Madelia.

Dr. Flynn is survived by his wife, a son, Hugh E., and three daughters, Josephine, Mrs. Henry Wolff, and Mrs. Harvard Gross, all of Minneapolis, and six grandchildren.

MYRON O. HENRY

Dr. Myron O. Henry, well known Minneapolis orthopedist, died suddenly August 31, at the age of fifty-nine.

Dr. Henry was born in Minneapolis in 1893. He was graduated from the University of Minnesota medical school in 1921, and was awarded the first fellowship in orthopedic surgery ever offered by the Harvard medical school. He returned to practice orthopedics in Minneapolis in 1923 and remained there to the time of his death, serving, also, for many years, as a member of the faculty of the University.

He was best known for his work on fusion of the spine and in treatment of fractures of the hip and he was a member of many medical groups, including the American Academy of Orthopedic Surgeons and the Clinical Orthopedic Society, both of which he served as president, and the American Orthopedic Association, the International Society of Orthopedic Surgeons, the American College of Surgeons, the American and Minnesota State Medical Associations and the Hennepin County Medical Society. He was also a member of the Minneapolis Club.

Dr. Henry is survived by his wife, Lucille, a daughter, Mrs. Katherine Perry, of La Habra, California, and three grandchildren.

FRANK M. PUGLIESE

Dr. Frank M. Pugliese, former fellow in surgery of the Mayo Foundation, died on August 13, 1953, in Wilkes-Barre, Pennsylvania.

Dr. Pugliese was born February 7, 1899, at Calimera, Italy. He received the degree of M.D. in 1923 from the University of Pennsylvania, and was an intern for a year and a fellow in surgery for a year at the Robert Packer Hospital, Sayre, Pennsylvania, from 1923 to 1925. He entered the Mayo Foundation as a fellow in surgery in April, 1925, and left the Mayo Foundation in October, 1928. He practiced general surgery at Scranton, Pennsylvania, until 1930, when he went to Wilkes-Barre where he practiced surgery until the time of his death. He was associate surgeon at the Mercy Hospital and consulting surgeon at the Pittston Hospital, Pittston. During World War II he was a lieutenant colonel in the Medical Corps of the Army of the United States.

Dr. Pugliese was a fellow of the American Medical Association and the American College of Surgeons, and a member of the Lehigh Valley Medical Association and the Alumni Association of the Mayo Foundation.

SHERWOOD B. SEITZ

Dr. Sherwood B. Seitz who practiced medicine at Barnesville for fifteen years, died at his home from pneumonia and a heart ailment August 4, 1953. Dr. Seitz was fifty-three years old.

He was born at Blanchester, Ohio, and was graduated in chemical engineering at the University of Northern Ohio in 1922. He served in the Army for eighteen months during World War I and taught school subsequently for nine years in North Dakota, serving as superintendent of schools at Rhame and at Forman before entering the University of North Dakota for premedical training. He was graduated in medicine from Northwestern University and served his internship at Fairview hospital in Minneapolis.

Dr. Seitz practiced medicine continuously at Barnesville from 1937 until 1950 when he moved to Richardton, North Dakota. He returned to Barnesville the next year and was active in practice there until a short time before his death.

Survivors include his wife, Bernice, and two daughters, Mrs. John Acker of Dickinson, North Dakota, and Beatrice, of Barnesville, also one son, Donald, of Barnesville, and a sister, Mrs. K. W. Preston, of Ada, Ohio.

RADIUM RENTAL SERVICE
4340 CEDARWOOD ROAD
MINNEAPOLIS 5, MINNESOTA
TEL. ATLANTIC 5297

Radium element prepared in type of applicator requested

ORDER BY TELEPHONE OR MAIL
PRICES ON REQUEST

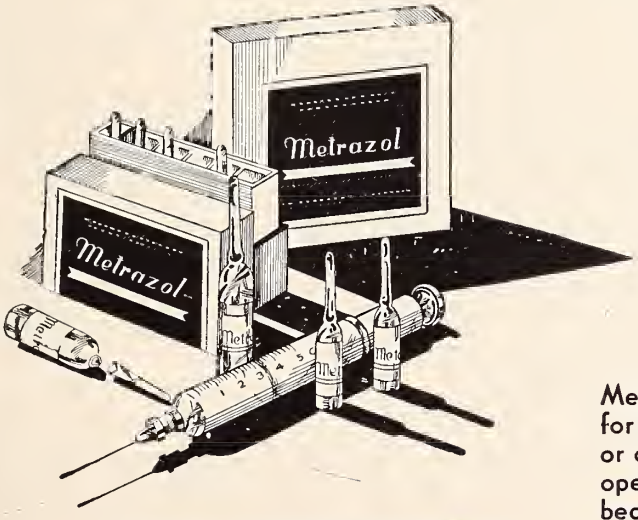
THE SHELTERING ARMS

4330 River Road, Minneapolis 6, Minnesota

A HOSPITAL FOR TREATMENT OF POLIOMYELITIS

Acute and Convalescent

Fully Approved by American College of Surgeons
Modern treatment—Staff includes Kenny trained technicians



Metrazol

A DEPENDABLE, QUICK-ACTING CEREBRAL AND MEDULLARY STIMULANT

Metrazol, pentamethylentetrazol
Ampules, 1 cc. and 3 cc.
Sterile Solution, 30 cc. vials
Tablets and Powder

Metrazol is indicated for narcotic depression, for instance, in poisoning with barbiturates or opiates, in acute alcoholism and during the operation and postoperatively when respiration becomes inadequate because of medullary depression due to the anesthetic.

Inject 3 cc. Metrazol intravenously, repeat if necessary, and continue with 1 or 2 cc. intramuscularly as required.

Bilhuber-Knoll Corp. Orange, N. J.

Of General Interest

Dr. and Mrs. Walter S. Neff, of Virginia, were honored on their twenty-fifth wedding anniversary, September 1, by the community members at an open house celebration. During the fifteen years that Dr. Neff has practiced in Virginia, he has been active in community projects. Currently he is serving as a member of the Virginia School Board.

* * *

Serving as members of a panel, "What is New for the Geriatric Patient," which was presented at the meeting of the American Association of Nursing Homes the first week in September, were **Dr. G. K. Stillwell** and **Dr. Mary H. Teberg,** of the faculty of the University of Minnesota. **Dr. Robert N. Barr,** of the State Health Department, served as moderator of the panel.

* * *

Dr. Harley Racer, who has been associated with **Dr. Ralph Rayner** in the Gibbon Clinic in Gibbon, for the past year, left in August to practice in Stillwater where he will be associated with **Dr. Henry Van Meier.**

* * *

Dr. Harold Thysell, a Lion's member, of the Crookston Clinic, spoke on polio at the regular noon luncheon meeting of the Lion's Club held August 17, at the Hotel Crookston.

* * *

Dr. E. J. Engberg, of Faribault, was re-elected president of the Rice County Public Health Association at the annual meeting held in late August.

* * *

Hospital administrators and nursing leaders from all parts of the state met August 21, to discuss the necessity of providing further funds for the rural nurse education program. The program of sending student nurses on regular rural affiliations was begun as a demonstration project by the University of Minnesota School of Nursing and has been supported by various organizations such as the W. K. Kellogg Foundation and the Farm Bureau Women of Minnesota. Currently fourteen urban nursing schools send their students to hospitals in six smaller communities—Hibbing, Bemidji, Grand Rapids, Worthington, Stillwater, and Glencoe.

* * *

Dr. James W. Rae, Jr., former fellow in physical medicine of the Mayo Foundation, who has been acting chairman of the Department of Physical Medicine and Rehabilitation of the University of Michigan Medical School, was named chairman and promoted to associate professor in August.

* * *

Dr. J. R. Brown, of the Mayo Clinic, attended a meeting of German neurologists, neurosurgeons, psychiatrists and neuropathologists, held in Munich, Germany, August 26 and 27. From there, Dr. Brown went to Lisbon, Portugal, to attend the meeting of the International Congress of Neurology.

* * *

Dr. Robert N. Barr, chief of the special services section of the State Health Department, was the main speaker at the dedication of the new $636,000 addition to the St. Cloud Hospital's school of nursing. The new addition provides residence quarters for 150 student nurses, as well as classrooms, a chapel, library, lounge, and laboratories.

* * *

Dr. John R. Earl, of Saint Paul, was elected president of the Minnesota Surgical Society at the August meeting. Dr. W. J. Deweese of Bemidji, was elected vice president, and Dr. Owen G. McDonald, of Duluth, secretary-treasurer.

* * *

Dr. P. S. Hench, of the Mayo Clinic, addressed the Eighth International Congress on Rheumatic Diseases in Geneva, Switzerland, August 25. Dr. Hench spoke on "The Cortisones and Corticotropins in Rheumatic Arthritis."

* * *

Dr. E. S. Palmerton, of Minneapolis, joined the staff of the Park Region Medical Center in Fergus Falls in August. Dr. Palmerton completed a three-year fellowship, specializing in eye diseases, at the University of Minnesota, in July.

* * *

Dr. Lloyd E. Harris, of the Mayo Clinic, Department of Pediatrics, spoke August 17 on the signs and symptoms of polio to nurses and lay persons attending the Fillmore County Polio Nursing Workshop held August 17 and 18 in the courthouse in Preston.

* * *

Dr. Stanley S. Chunn, who has been in the practice of ophthalmology and otolaryngology in Pipestone for the past eighteen years, moved to Willmar in August, and now practices his specialty as a member of the Lakeland Medical Center group.

* * *

Dr. and Mrs. Charles W. Mayo, of Rochester, were guests of honor at a dinner held in the Curtis Hotel, Minneapolis, August 24. The dinner was given by the Minnesota United Nations Association honoring Dr. Mayo for his recent appointment as alternate delegate to the United Nations Assembly, and Mrs. Mayo for her service as a member of the board of directors of the Minnesota United Nations Association.

* * *

Dr. Victor Johnson, of the Mayo Clinic, represented the American Medical Association at the First World Conference on Medical Education, held in London, England, the week of August 24. As vice president, Dr. Johnson presided over the section

"That's For Me"

Every so often someone who has previously given only a casual thought to purchasing Municipal Bonds for himself finds an opportunity to learn the full story about them.

Once he becomes familiar with the inherent security and tax-exempt features of Municipal Bonds he is quite likely to believe "That's for Me."

We invite you to investigate—then give serious consideration to the purchase of Municipal Bonds for your own security.

JURAN & MOODY
MUNICIPAL SECURITIES EXCLUSIVELY

TELEPHONES:
GArfield 9361
PRior 6423

93 E. SIXTH STREET
ST. PAUL 1, MINNESOTA

sessions on "Requirements for Entrance into Medical Studies. The Selection of Students." He also participated in a survey of medical schools in Dublin, Ireland.

* * *

Dr. Eugene L. Bauer, of Saint Paul, attended the meeting of the American Otorhinologic Plastic Surgery Society, held in Chicago, Illinois, October 11.

* * *

Dr. Earl Opstad, on the Glen Lake Sanatorium staff, spoke on "Modern Methods of Tuberculosis Treatment," August 18, to the survey block workers of Plymouth Township, Robbinsdale. The mobile x-ray unit survey began in Plymouth Township in September.

* * *

Dr. George R. Melzer, of Lyle, after fifty years of medical practice, thirty-eight being spent in Lyle, retired from active practice in August.

* * *

Dr. J. F. Haas, of Saint Paul, joined **Dr. Glenn E. Nelson** in his practice at Fairfax, in August. A new clinic building for the physicians is under construction. Dr. Haas is a graduate of the University of Minnesota Medical School and recently completed his internship at Ancker Hospital in Saint Paul.

HELP FOR
PROBLEM DRINKERS

Hazelden Foundation (non-profit) is dedicated to the treatment of problem drinking through research, education, and rehabilitation. It has ideal facilities on Lake Chisago near Center City, Minn. Your inspection is invited at any time.

HAZELDEN FOUNDATION

Let us send you complete information

A NON-PROFIT ORGANIZATION

2639 University Avenue **St. Paul 14, Minnesota**
24-hour service **Phone NEstor 5958**

AT YOUR CONVENIENCE, DOCTOR . . .

you are cordially invited to visit our new and modern prescription pharmacy located on the street floor of the Foshay Tower, 100 South Ninth Street.

With our expanded facilities we will be able to increase and extend the service we have been privileged to perform for the medical profession over the past years.

Exclusive Prescription Pharmacy

Biologicals Pharmaceuticals Dressings
Surgical Instruments Rubber Sundries

JOSEPH E. DAHL CO.
(Two Locations)
100 South Ninth Street, LaSalle Medical Bldg.
ATlantic 5445 Minneapolis

Dr. O. S. Kulstad, of Dodge Center, made the final placing in the county health contest which is sponsored annually by the 4-H Club during the week of the Dodge County Fair.

* * *

St. Joseph's Hospital, of Saint Paul, recently opened its new isotope laboratory under the direction of **Dr. Joseph M. Ryan.** Dr. Ryan received his training in this field at Oak Ridge, Tennessee, and at the Army Medical Center in Washington, D. C.

* * *

Dr. Owen F. Robbins, of Edina, left for Europe in August to attend the seventh general assembly of the World Medical Association in The Netherlands, August 31 to September 5.

* * *

Dr. J. W. Schut, psychiatrist formerly employed at the Anoka State Hospital, spent some time visiting friends in Anoka, before assuming his new duties at Galesburg, Illinois, State Research Hospital, in September.

* * *

Dr. John W. Johnson, of Minneapolis, is recovering from chest injuries he suffered in an automobile accident which occurred August 2, near Rapid City, South Dakota. Dr. Johnson was released from St. John's Hospital in Rapid City in late August. Mrs. Johnson, who suffered injuries of the face, was able to leave the hospital after several weeks and return to Minneapolis. The three Johnson children were not injured.

* * *

Dr. C. H. Holmstrom, of Warren, served as a guest columnist in an early August issue of the *Warroad Pioneer.*

* * *

Dr. E. M. Anderson, of St. Cloud, served as chairman of general arrangements for the annual Stearns-Benton Medical Society picnic held August 8, in the Sauk Rapids Municipal Park, Sauk Rapids. The Society sponsors the picnic each year for physicians and their families.

* * *

Dr. N. F. Musachio, of Foley, was recently named president of the Benton County Tuberculosis and Health Association. Dr. Musachio replaces **Dr. C. S. Donaldson,** of St. Cloud, formerly of Foley, who headed the county association for many years.

* * *

Dr. Robert E. Hansen, who recently completed his residency in internal medicine at the Mayo Clinic, returned to practice in the Adams Clinic in Hibbing, in August.

* * *

Dr. Roger W. Brockway, who recently completed his internship at St. Luke's Hospital, in Duluth, has joined **Drs. G. M. Erskine, C. R. Ferrell,** and **John B. Evensta,** in their practice with offices in the Medical Arts Bulding in Grand Rapids.

* * *

Dr. Bruce Douglass, of the Mayo Clinic staff, served as master of ceremonies at the Mayo Clinic

North Shore Health Resort

Winnetka, Illinois

on the Shores of Lake Michigan

A completely equipped sanitarium for the care of nervous and mental disorders, alcoholism and drug addiction offering all forms of treatment, including electric shock.

SAMUEL LIEBMAN, M.S., M.D.

225 Sheridan Road **Medical Director** **Phone Winnetka 6-0211**

Women's Club annual picnic which was held August 19 at the Club House for the Mayo Clinic staff members.

* * *

Dr. M. M. Hargraves, of the Mayo Clinic staff, spoke at the meeting of the International Society of Hematology, held in Amsterdam, Holland, the second week in September, and also to a medical group in Leyden, Holland. Dr. and Mrs. Hargraves are touring Europe for several months.

* * *

A new clinical psychologist, **Allen Hodges, Ph.D.,** joined the Albert Lea Community Mental Health Center, in August. Dr. Hodges, of Oak Ridge, Tennessee, has been director of guidance in psychology in the public schools in Tennessee for the past five years.

* * *

Dr. C. W. Broders, former Mayo Foundation fellow who is serving with the Navy Medical Corps, is shown in a picture which was published in *Life Magazine,* August 10. The picture was taken at the Korean fighting front just before the armistice.

* * *

Dr. W. M. Kunkel, Mayo Foundation fellow, joined the staff at Nopeming Sanatorium in August.

* * *

Dr. Victor Johnson, director of the Mayo Foundation, attended the First World Conference on Medical Education, held in London, August 22 to 29. About 200 physicians from the United States attended the conference.

* * *

Dr. H. W. Schmidt, Mayo Clinic staff member, returned to Rochester in August after a two and a half months' tour of Europe. Dr. Schmidt delivered a paper at the Second International Congress of Bronchoesophagology, held at Le Zoute, Belgium, in June.

* * *

Dr. Maurice L. Straus and **Dr. J. Warren Strand** have formed a partnership in general practice with offices at 745 White Bear Avenue, Saint Paul. Dr. Strand graduated from the University of Minnesota Medical School in 1950, interned at Ancker Hospital, Saint Paul, in 1950-1951, and has been associated with Dr. Straus since July, 1951.

* * *

Dr. F. C. Gibbons, who practiced in Comfrey for twenty-two years, visited friends in that community in late August. Dr. Gibbons moved to Long Beach, California, in 1951.

* * *

Dr. George E. Nelson, of Minneapolis, became engaged, in August, to Miss Helen Jean Anderson, of Minneapolis. Dr. Nelson was graduated from the University of Minnesota Medical School and completed his internship at St. Luke's Hospital in Chi-

COOPER CREME
TRADE MARK
The original vaginal creme
ACCEPTED
COUNCIL ON PHARMACY AND CHEMISTRY
AMERICAN MEDICAL ASSOCIATION
FORMULA
Trioxymethylene

For BETTER Birth Control

Since 1934

No Finer Name in Contraceptives...

A product of
WHITTAKER LABORATORIES, Inc
PEEKSKILL, N.Y.

Active Ingredients	
Trioxymethylene	0.04%
Sodium Oleate	0.67%

STOP . . .

BEFORE YOU BUY YOUR NEW CAR—SEE US . . .

we can save you money on the finance charge.

AMERICAN NATIONAL BANK
OF SAINT PAUL

Bremer Arcade Robert at 7th CE 6666

Member Federal Deposit Insurance Corporation

cago. Miss Anderson attended the University of Minnesota and was graduated from St. Mary's Hospital School of Nursing, Rochester.

* * *

Dr. Roger Anderson, who has been practicing in Detroit Lakes in association with **Dr. William C. Dodds** for the past year, became associated with **Dr. B. H. McLaughlin** and **Dr. C. D. Robinson** in the Crystal Medical Clinic, Crystal Village, Minneapolis in September.

* * *

Capt. Sidney Esensten, MC, U. S. Army, of Saint Paul, was released in August, after spending thirty-three months in a Communist prison camp. Dr. Esensten, a graduate of the University of Minnesota Medical School, was recalled to the army in 1950.

* * *

Dr. G. Charles Wilcox, who has practiced in St. Peter since 1948, began practice in Wood Lake, October 1. Dr. Wilcox received his medical degree from the University of Minnesota Medical School and served in the Army Medical Corps from 1946 to 1948.

* * *

The Dr. W. A. Coventry Award, granted as a memorial to the late Dr. W. A. Coventry, was awarded to Miss Rosemary E. Bodie, of Cloquet, at the graduating exercises of the College of St. Scholastica, department of nursing, Minneapolis, August 23. The award is given to the nurse in each graduating class who "best demonstrates proficiency in obstetric nursing and exemplifies the qualities of courtesy and understanding of the patients' needs."

* * *

Dr. M. W. Dobson, who was graduated from the University of Manitoba Medical School, Canada, and did graduate work in surgery at Vanderbilt University, Nashville, Tennessee, has become associated in medical practice with **Dr. R. G. Hassett** and **Dr. J. Von Drasek,** in the Medical Center in Mankato.

* * *

Dr. C. G. Uhley, of Crookston, president of the Minnesota chapter of the American Cancer Society, reported in September that the 1953 fund drive was over-subscribed by $44,667.13. The fund-drive goal had been $318,600 and $363,267.13 was received.

DANIELSON MEDICAL ARTS PHARMACY, INC.

10-14 Arcade, Medical Arts Building
825 Nicollet Avenue—Two Entrances—78 South Ninth Street
MINNEAPOLIS

PHONES:
ATLANTIC 3317
ATLANTIC 3318

HOURS:
WEEK DAYS—8 to 7
SUN. AND HOL.—10 TO 1

Ulmer
PHARMACAL COMPANY
1400 Harmon Place
Minneapolis 3, Minnesota

send for our new brochure M-1053a on

ULVICAL "ULMER"

the last word in pre-natal therapy

Dr. L. H. Rutledge, of Detroit Lakes, was elected president of the Northern Minnesota Medical Association at the annual meeting held August 28, in Fergus Falls. Dr. Rutledge succeeds **Dr. G. J. Mouritsen,** of Fergus Falls. **Dr. D. L. Jacobs** of Willmar, was chosen vice president, and **Dr. C. L. Oppegaard,** of Crookston, was re-elected secretary-treasurer.

* * *

Dr. and Mrs. J. E. Carman, formerly of Detroit Lakes, were honored at a garden reception at their home in La Canada, California, on their fiftieth wedding anniversary, August 20. Dr. Carman ended forty-three years of medical practice in Detroit Lakes in the fall of 1950, when he moved to California.

* * *

Dr. Lawrence Larson, of Minneapolis, accompanied Dr. Walter J. Breckenridge, director of the University of Minnesota Museum of Natural History, on a trip into the wilds of the Hudson Bay territory, in July. Dr. Larson has a series of color photos recording scenery and adventures of the expedition.

* * *

Dr. Henry L. Ulrich, aged seventy-seven, was awarded the St. Barnabas Bowl, an award for activity that marks him as outstanding among medical men of Hennepin County, September 2. Dr. Ulrich has a record of fifty-one years of continuous practice in internal medicine in Minneapolis. A diplomate of the American Board of Internal Medicine and a fellow of the American College of Physicians, Dr. Ulrich has been president of the Minnesota Academy of Medicine, Minnesota Pathology Society, and the Hennepin County Medical Society. Currently Dr. Ulrich is on the staffs of Northwestern, Abbott, Eitel, and Deaconess Hospitals, and is a consultant at Swedish and St. Mary's Hospitals. He has held the rank of emeritus professor from the University of Minnesota Medical School since 1951.

* * *

The 1952-1953 report of the public school health department of Duluth shows that **Dr. Carl O. Kohlbry,** medical director, conducted about 5,000 physical examinations on elementary school pupils and 700 examinations on athletes during the year.

* * *

Dr. C. L. Sherman, of Luverne, was honored in commemoration of his fifty years as a physician and surgeon in Luverne by a community "open house," September 24. Included on the committee in charge of arrangements were **Drs. F. W. Bofenkamp, A. C. Martin,** and **Ervin S. Boone.**

* * *

Dr. William R. Kueffner, Southport, Connecticut, formerly of Saint Paul, was married October 24, to Miss Nancy Joan Burst-Brown, of Fleet Hampshire, England. Dr. Kueffner was graduated from the

ACCIDENT • HOSPITAL • SICKNESS

INSURANCE

For Physicians, Surgeons, Dentists Exclusively

ALL PREMIUMS COME FROM
PHYSICIANS SURGEONS DENTISTS
ALL CLAIMS GO TO

$5,000 accidental death Quarterly $8.00
$25 weekly indemnity, accident and sickness

$10,000 accidental death Quarterly $16.00
$50 weekly indemnity, accident and sickness

$15,000 accidental death Quarterly $24.00
$75 weekly indemnity, accident and sickness

$20,000 accidental death Quarterly $32.00
$100 weekly indemnity, accident and sickness

COST HAS NEVER EXCEEDED AMOUNTS SHOWN

ALSO HOSPITAL INSURANCE

	Single	Double	Triple	Quadruple
60 days in Hospital	5.00 per day	10.00 per day	15.00 per day	20.00 per day
30 days of Nurse at Home	5.00 per day	10.00 per day	15.00 per day	20.00 per day
Laboratory Fees in Hospital	5.00	10.00	15.00	20.00
Operating Room in Hospital	10.00	20.00	30.00	40.00
Anesthetic in Hospital	10.00	20.00	30.00	40.00
X-Ray in Hospital	10.00	20.00	30.00	40.00
Medicines in Hospital	10.00	20.00	30.00	40.00
Ambulance to or from Hospital	10.00	20.00	30.00	40.00
COSTS (Quarterly)				
Adult	2.50	5.00	7.50	10.00
Child to age 19	1.50	3.00	4.50	6.00
Child over age 19	2.50	5.00	7.50	10.00

$4,000,000.00
INVESTED ASSETS

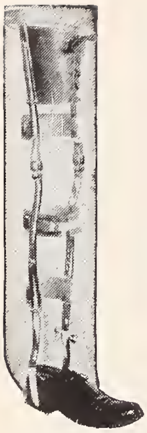
PHYSICIANS CASUALTY ASSOCIATION
PHYSICIANS HEALTH ASSOCIATION

$19,500,000.00
PAID FOR CLAIMS

51 years under the same management

400 First National Bank Building
Omaha 2, Nebraska

$200,000.00 deposited with State of Nebraska for protection of our members



SKILL AND CARE!

Combine with quality materials in all Buchstein-Medcalf orthopedic appliances. Our workmanship and scientific design conform to the most exacting professional specifications. Accepted and appreciated by physicians and their patients for more than 45 years.

ARTIFICIAL LIMBS, TRUSSES,
ORTHOPEDIC APPLIANCES,
SUPPORTERS, ELASTIC HOSIERY

Prompt, painstaking service

Buchstein-Medcalf Co.
223 So. 6th St. Minneapolis 2, Minn.

Distributors to the profession

of fine

Injectable Vitamins and Endocrines

Interstate Pharmacal Company
P.O. Box 252 Beloit, Wis.

MAIL ORDERS SHIPPED IMMEDIATELY

University of Minnesota Medical School and did graduate work in pediatrics at New York Hospital.

* * *

Dr. L. J. Kucera, chief of the medical section of the Veterans Administration insurance service, Ft. Snelling, from 1949 to 1951, and recently on the staff of the Veterans Hospital at Omaha, Nebraska, has been appointed chief medical officer of the Veterans Hospital at Fargo, North Dakota. Dr. Kucera assumed his duties at Fargo in late September.

* * *

Drs. G. W. Daugherty and **J. W. Pender,** of the Mayo Clinic, attended a meeting of the Saskatchewan Provincial Branch of the Canadian Medical Association, held at Lake Waskesiu, Saskatchewan, the last week in August. Dr. Daugherty presented a paper entitled, "The Current Concepts of the Management of Nephritis," and Dr. Pender, "Prevention of Serious Complications During Anesthesia."

* * *

MINNESOTA BLUE CROSS-BLUE SHIELD

An analysis and review of the Blue Shield claims filed for consultation services since October 1, 1952, discloses that the number of such claims per month has increased eightfold (800 per cent) from the first three months that this benefit was provided through the first six months of 1953. This marked increase and the consequent cost are reaching such large proportions that it emphasizes the need for review of various controlling factors considered at the time consultation services were added to the Blue Shield contract. These factors in-

HOMEWOOD HOSPITAL is one of the Northwest's outstanding hospitals for the treatment of Nervous Disorders—equipped with all the essentials for rendering high-grade service to patient and physician.

Operated in Connection with
Glenwood Hills Hospitals

HOMEWOOD HOSPITAL
Corner Penn and Plymouth Avenues North
Minneapolis Minnesota

The Birches Sanitarium, Inc.
2391 Woodland Avenue
Duluth 3, Minnesota

A hospital for the care and treatment of Nervous and Mental disorders. Quiet, cheerful environment. Specially trained personnel. Recreational and occupational therapy.

Dr. L. R. Gowan, M.D., M.S., Medical Director

cluded the financial difficulties encountered by one Blue Shield plan as a result of consultations, the safeguards necessary to avoid dangerous over-utilization, and the fact that consultations should be available to Blue Shield subscribers when they are vitally necessary.

First among the principal safeguards against over-utilization of consultation services inserted in the contract is the requirement that there be "a bona fide and urgent need for such consultation services." This language means that the condition involved, or the medical status of the patient, must be such as to constitute a serious threat to his life, or else that some basically difficult differential diagnosis exists which requires immediate solution for proper treatment.

Consultation services had never been provided by the Blue Shield contract prior to October 1, 1952. Prior to that date the feeling had been growing among the members of the Blue Shield Board of Directors that some provision should be made whereby consultation services could be provided in cases of urgent need. However, such a provision could not be included in the contract solely as an amplification of payment for in-hospital medical care. The necessity for leaving certain costs to the personal responsibility of the subscriber so as to prevent any spiral of rate increases still existed, yet this seemed a needed addition to the benefits for those cases involving a truly urgent need.

The second major control of over-utilization is found in the contract clause which provides that the final determination of the need for consultation services

Cook County Graduate School of Medicine

POSTGRADUATE COURSES—1953

SURGERY—Intensive Course in Surgical Technic, two weeks, starting October 12, October 26, November 9
Surgical Technic, Surgical Anatomy and Clinical Surgery, four weeks, starting October 26
Surgical Anatomy and Clinical Surgery, two weeks, starting November 9
Gallbladder Surgery, ten hours, starting October 26
General Surgery, two weeks, starting October 12
Surgery of Colon and Rectum, one week, starting October 26
Thoracic Surgery, one week, starting October 12
Esophageal Surgery, one week, starting October 19
Breast and Thyroid Surgery, one week, starting October 26
Fractures and Traumatic Surgery, two weeks, starting October 26

GYNECOLOGY—Intensive Course, two weeks, starting October 19
Vaginal Approach to pelvic Surgery, one week, starting November 2

OBSTETRICS—Intensive Course, two weeks, starting November 2

MEDICINE—Electrocardiography and Heart Disease, two weeks, starting October 12
Gastroenterology, two weeks, starting October 26
Gastroscopy, two weeks, starting November 2

DIAGNOSTIC X-RAY—Clinical Course every week by appointment

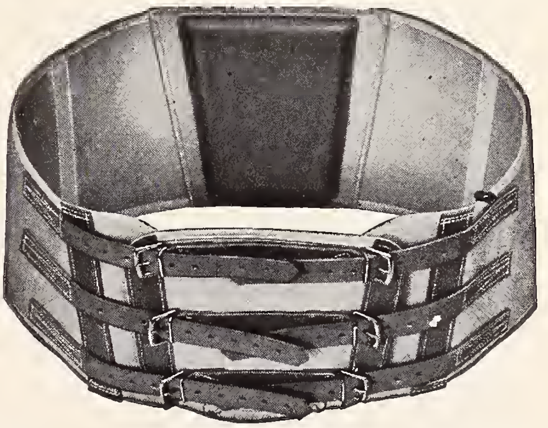
CYSTOSCOPY—Ten-day practical course starting every two weeks

TEACHING FACULTY—ATTENDING STAFF OF COOK COUNTY HOSPITAL

ADDRESS: REGISTRAR, 707 South Wood Street, Chicago 12, Illinois

Popular Type **SACRO-ILIAC BELT**

This high-grade sacro-iliac support is made of orthopedic webbing, 6 inches wide, well reinforced and supplied with perineal straps.



To determine size needed, take measurements around hip, 3 inches below the iliac crest. Stock sizes 30 to 44. Extra sizes available on special order.

Professional Price $5.95

Abdominal Supporters *Elastic Stockings* *Trusses*

C. F. ANDERSON CO., INC.

Surgical and Hospital Equipment

ATlantic 6508, ZEnith 2055 **901 Marquette Ave.**

MINNEAPOLIS 2, MINNESOTA

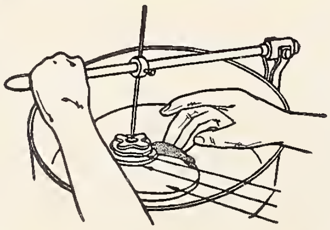
THE
MEDICAL PROTECTIVE
COMPANY
FORT WAYNE, INDIANA

PROFESSIONAL PROTECTION
EXCLUSIVELY
SINCE 1899

specialized service
assures *"know-how"*

MINNEAPOLIS Office:
Robert L. McFerran, Rep.,
2426 Clinton Ave. So., Apt. E-8,
Telephone Fillmore 1292

UNUSUAL LENS GRINDING



CATARACT,
MYO-THIN
and other difficult and complicated lenses are ground to extreme thinness and accuracy by our expert workmen.

ARTHUR F. WILLIAMS
SAINT PAUL
MINNESOTA

shall be made by Blue Shield itself. Need for such a provision was apparent in cases of obvious abuse of the consultation benefit, and in cases in which differences of opinion are found to exist. Also, incorporating such a provision in the contract seemed necessary as a check upon excessive or hazardous costs of consultation services. Quite obviously, the intent of this language was not rejection of consultation claims in urgently needy cases, but administrative control if use of consultation gets out of hand.

And the third safeguard consists of the limitation of one consultation for each subscriber for each year, and the further stipulation that the consultations cannot be accumulated. The practical effect of this limitation is that a subscriber may have one paid consultation per contract year, but that if no consultation is used one year, more are not available the next year.

From the foregoing, it is apparent that the purpose of the consultation provision is to make available to the subscriber and the profession an additional benefit in those cases where such services are warranted because of the danger to the life of the subscriber, or because of a difficult differential diagnosis of vital importance to the life of the subscriber. It is not intended for cases where the patient's life was not endangered, or where the attending physician simply felt that for the patient's general welfare another physician should be consulted. In such instances, the cost must, of necessity, be left to the subscriber, or the end-result will require either a premium increase or a reduction of benefits elsewhere. It is believed that with the full understanding of the profession of all these considerations regarding consultation and the need to control its abuse or over-utilization, this relatively new benefit should be of mutual advantage to subscribers and members of the profession.

* * *

The AMA Council on Medical Service now has available for distribution copies of a detailed report on county medical society grievance committees. The study deals with the organization, functions, and operations of 198 mediation committees throughout the country. To make the data more practical, societies have been divided into groups according to size.

PATTERSON SURGICAL SUPPLY COMPANY
130 W. Seventh Street, St. Paul 2, Minn.
HOSPITAL AND PHYSICIANS SUPPLIES AND EQUIPMENT
Cedar 1781-82-83

Insurance at a Saving
Druggists' Mutual Insurance Company
OF IOWA, ALGONA, IOWA
Fire - Tornado - Automobile Insurance
Prompt Loss Service
MINNESOTA REPRESENTATIVE—S. E. STRUBLE, WYOMING, MINN.

BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical Libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

ANTIBIOTICS. Second Edition. Robertson Pratt, Ph.D., Professor of Pharmacognosy and Plant Physiology, University of California College of Pharmacy, Consultant on Antibiotics, and Jean Dufrenoy, D.Sc., Research Associate in Antibiotics, University of California College of Pharmacy. 398 pages. Illus. Price $7.50, cloth. Philadelphia: J. B. Lippincott Co., 1953.

SEXUAL BEHAVIOR IN THE HUMAN FEMALE. Alfred C. Kinsey, Wardell B. Pomeroy, Clyde E. Martin and Paul H. Gebhard, Research Associates of the Staff of the Institute of Sex Research, Indiana University. 842 pages. Illus. Price $8.00, cloth. Philadelphia: W. B. Saunders Co., 1953.

MANAGING YOUR CORONARY. William A. Brams, M.D. 158 pages. Illus. Price $2.95, cloth. Philadelphia: J. B. Lippincott Co., 1953.

ROCKEFELLER FOUNDATION. Annual Report, 1952. 465 pages. Illus. New York: Rockefeller Foundation, 1953.

THE PEOPLE'S HEALTH. A History of Public Health in Minnesota to 1948. Philip D. Jordan, Ph. D., Professor of History, University of Minnesota. 524 pages. Illus. Price $5.00, cloth. Saint Paul: Minnesota Historical Society, 1953.

SYNOPSIS OF PEDIATRICS. Sixth Edition. John Zahorsky, A.B., M.D., F.A.A.P., Professor Emeritus of Pediatrics and formerly Director of the Department of Pediatrics, St. Louis University School of Medicine, and formerly Pediatrician-in-Chief to the St. Mary's Group of Hospitals, Fellow of the American Academy of Pediatrics. Assisted by T. S. Zahorsky, B.S., M.D. Senior Instructor in Pediatrics, St. Louis University School of Medicine, and Assistant Pediatrician to the St. Mary's Group of Hospitals. 470 pages. Illus. Price $7.50, flexible binding. St. Louis: C. V. Mosby Co., 1953.

TOBACCO AND THE CARDIOVASCULAR SYSTEM; THE EFFECTS OF SMOKING AND OF NICOTINE ON NORMAL PERSONS. By Grace M. Roth, Ph.D., Associate Professor of Experimental Medicine, Mayo Foundation for Medical Education and Research, Graduate School, University of Minnesota, and Consultant in Section on Physiology, Mayo Clinic, Rochester, Minnesota. 60 pages. Price $2.25. Springfield, Ill.: Charles C Thomas, ©1951.

This monograph, written by Dr. Roth, is an excellent presentation of the problem of tobacco in relation to the cardiovascular system. It contains the experimental data which have been accumulated concerning the effects of tobacco on the cardiovascular system with specific reference to nicotine. It represents an important contribution to the problems of cardiovascular disease and is a monograph which every physician and surgeon dealing with such problems should read.

Dr. Roth has had a great deal of experience in this field, and her opinions carry considerable weight.

Frederick M. Owens, Jr., M.D.

It had to be good
to get where it is
DRINK
Coca-Cola
REG. U. S. PAT. OFF.
THE COCA-COLA COMPANY

Classified Advertising

Replies to advertisements with key numbers should be mailed in care of MINNESOTA MEDICINE, *2642 University Avenue, Saint Paul 14, Minn.*

RADIOLOGIST—Diplomate American Board in Radiology, thirty-one years old, Priority IV, Member ACR, desires association with hospital, individual or group. Address E-381, care MINNESOTA MEDICINE.

FOR RENT—Attractive doctor's suite in south Minneapolis. Wonderful location for a practice to be built up, or as an outlying office for a downtown doctor. Write Wm. L. Cochrane, 7301 Fremont Avenue South, Minneapolis 19, Minnesota. Telephone RO 9-8758.

WANTED—Locum tenens for one or more months. Address E-377, care MINNESOTA MEDICINE.

WANTED—Associate in general practice, prefer someone with surgical experience. Address E-378, care MINNESOTA MEDICINE.

FOR SALE—Active practice, home also available if desired, terms reasonable. Address E-379, care MINNESOTA MEDICINE.

FOR SALE: Saint Paul practice for the price of the equipment in fast-growing neighborhood. Address E-385, care MINNESOTA MEDICINE.

WANTED—Psychiatrist—to associate with 100-bed mental hospital. Rocky Mountain region—serving six state area—devote some time to out-patients also. Five-room home available. Colorado license necessary. Address E-386, care MINNESOTA MEDICINE.

PHYSICIANS' OFFICES—Several spaces available in modern air-conditioned clinic building, having complete laboratory and x-ray facilities available, adjacent to new hospital in Saint Paul. Ample parking space. Five minutes from loop. Rent as low as one hundred dollars per month. May also share in referrals. Address, 642 East Seventh Street, Saint Paul 6, Minnesota.

DOCTOR URGENTLY NEEDED in newly developed and rapidly growing community in Saint Paul, accessible to both Saint Paul and Minneapolis. Office, examining room and laboratory; share reception room with dentist. Rent reasonable. Telephone DeSoto 3766 mornings before 1 P.M., or after 8 P.M.

PLACEMENT SERVICE

The Minnesota State Medical Association maintains a Medical Placement Service for the benefit of physicians who are looking for locations and positions; also for communities, medical groups and physicians who are looking for licensed medical assistance. For information, write to the Minnesota State Medical Association, 496 Lowry Medical Arts Bldg., Saint Paul 2, Minnesota.

Index to Advertisers

Abbott Laboratories 1016, 1017, 1023
Aloe, A. S., Co. 1086
American National Bank 1096
Ames Co., Inc. 1020
Anderson, C. F., Co., Inc. 1099
Ayerst, McKenna & Harrison 1028

Baker Laboratories, Inc. 1022
Benson Optical Co. 1089
Bilhuber-Knoll Corporation 1091
Birches Sanitarium, Inc. 1098
Brown & Day, Inc. 1088
Buchstein-Medcalf Co. 1098

Camel Cigarettes 1025
Caswell-Ross Agency 1010
Classified Advertising 1102
Coca-Cola Co. 1101
Cook County Graduate School of Medicine 1099
Cordelia of Hollywood 1087
Crestview Hospital 1030

Dahl, Joseph E., Co. 1094
Danielson Medical Arts Pharmacy 1096
Druggists Mutual Insurance Co. 1100

Ewald Bros. ..... Inside Back Cover

Fuller Pharmaceutical Co. 1018

General Electric Co. 1024
Glenwood Hills Hospitals 1103

Hall, Anderson & Nordehn 1089
Hazelden Foundation 1094
Homewood Hospital 1098

Interstate Pharmacal Co. 1098

Juran & Moody 1093

Lederle Laboratories ..... Facing page 1024
Lilly, Eli, & Co. ..... Front Cover, 1032

Mead Johnson & Co. 1104
Medical Protective Co. 1100
Merck & Co., Inc. 1013
Milwaukee Sanitarium ..... Back Cover
Mounds Park Hospital ..... Back Cover

North Shore Health Resort 1095

Parke, Davis & Co. ..... Inside Front Cover, 1009
Patterson Surgical Supply Co. 1100
Pfizer Laboratories 1027
Physicians & Hospitals Supply Co., Inc. 1014
Physicians Casualty Association 1097
Professional Credit Protective Bureau 1015

Q-Test 1030

Radium Rental Service 1090

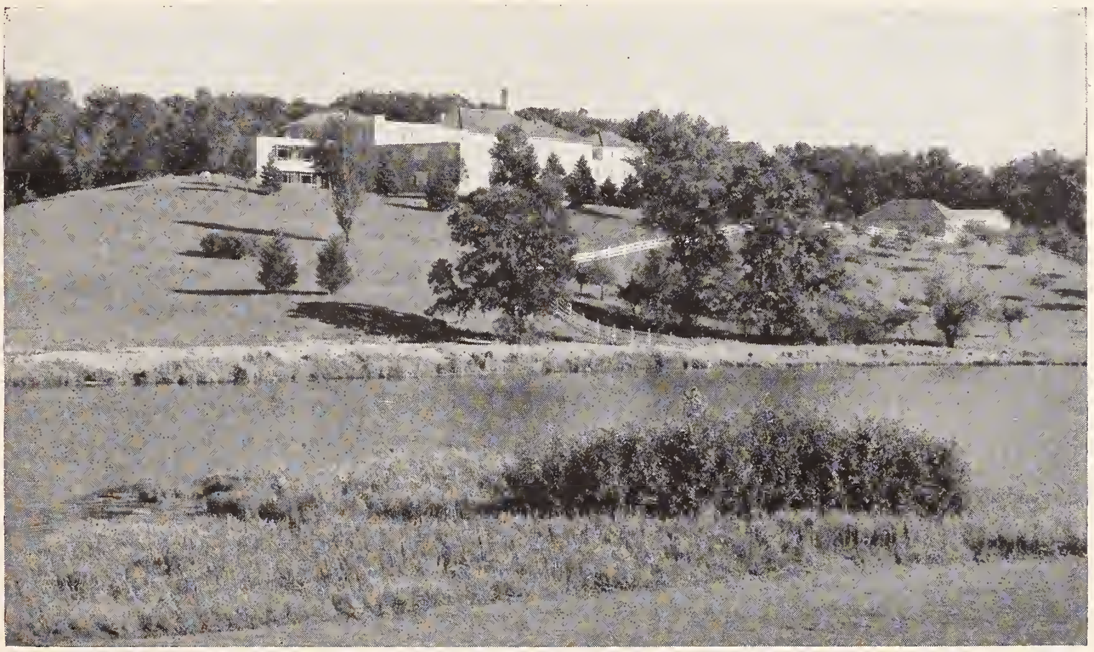
St. Croixdale Sanitarium 1012
Schering Corporation 1021
Searle 1085
Sheltering Arms 1091
Squibb 1019

Ulmer Pharmacal Co. 1096
Upjohn 1029

Whittaker Laboratories 1096
Williams, Arthur F. 1100
Winthrop-Stearns, Inc. 1026
Wyeth 1031

DOCTOR...*This is Your Hospital and Your School of Neuropsychiatric Nursing*

(By that we mean that not only have these institutions undertaken to constitute a haven of help for patients, but they form, in your interest a *remarkable facility for you professionally.)*



View of hospital, school, buildings and environs, 7 minutes from downtown Minneapolis

A COMPLETE NEURO-PSYCHIATRIC HOSPITAL

Up-to-date in all respects, new, functional buildings, set in spacious grounds, rehabilitation center, electroencephalography, therapies, laboratory. One of the largest neuro-psychiatric staffs in the United States. A voluntary, non-profit, non-sectarian institution of which this region may be proud.

SCHOOL FOR NEURO-PSYCHIATRIC NURSING

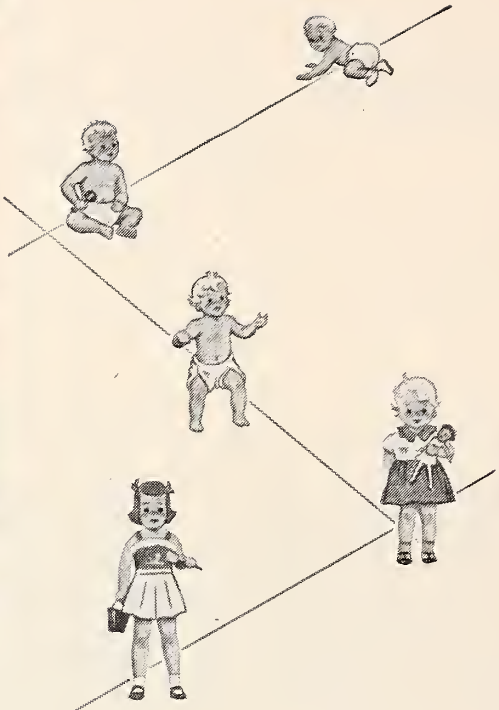
To offset the existing universal shortage of nurses, Glenwood Hills conducts a one-year course in neuropsychiatric nursing. You have observed the skill and attitudes of our graduates and trainees. Recruit one or two in behalf of your profession as a "contribution" stipulating that we send them back to you when trained. We will. Meanwhile tuition, room and board are free.

Glenwood Hills Neuro-psychiatric Hospital
School of Neuro-psychiatric Nursing

3901 Golden Valley Road, Minneapolis 22, Minnesota JUniper 2771

Helen Swenson Rascop, Director of Nurses

50 cc.
Oleum Percomorphum
WITH OTHER FISH LIVER OILS AND VIOSTEROL
MEAD
MEAD JOHNSON & COMPANY
Evansville, Indiana, U.S.A.



adequate protection costs so little

No child need be denied protection against the threat of rickets and vitamin A and D deficiencies.

Mead's Oleum Percomorphum is a potent, dependable source of vitamins A and D . . . that can be administered at a cost of about a cent a day.

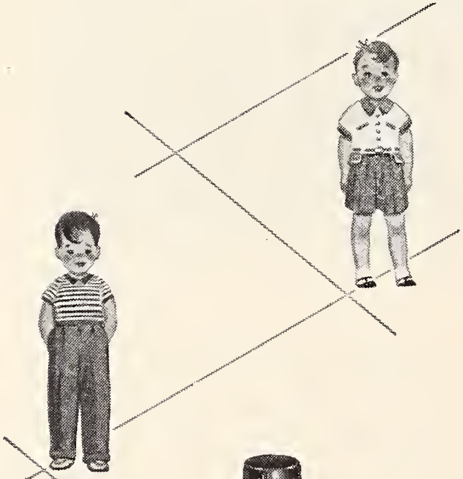
Specify MEAD'S OLEUM PERCOMORPHUM . . . the pioneer product with 18 years of successful clinical use.

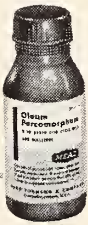
Available in 10 cc. and economical 50 cc. bottles; also in bottles of 50 and 250 capsules.

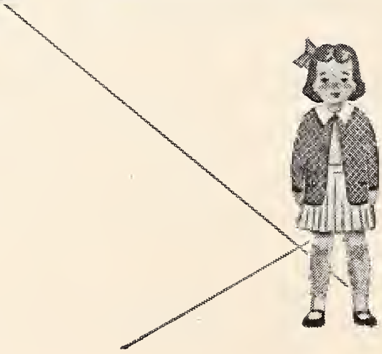
Mead's Oleum Percomorphum

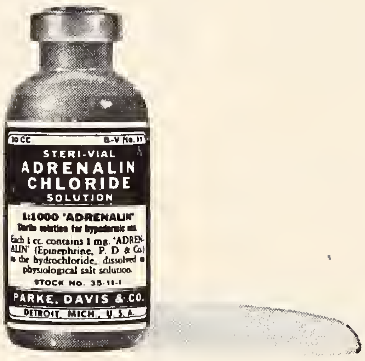
MEAD

MEAD JOHNSON & COMPANY • EVANSVILLE 21, IND., U.S.A.








10 CC
STERI-VIAL
ADRENALIN
CHLORIDE
SOLUTION
1:1000 'ADRENALIN'
Each 1 cc. contains 1 mg. 'ADRENALIN' (Epinephrine, P. D. & Co.) as the hydrochloride, dissolved in physiological salt solution.
STOCK No. 35-11-1
PARKE, DAVIS & CO.
DETROIT, MICH., U.S.A.

ADRENALIN®

Introduced to the medical profession by the Parke-Davis Research Laboratories in 1901, ADRENALIN (epinephrine, Parke-Davis) is one of the best known and most widely used of all drugs. Its value and versatility are indicated by its wide application—

In Medicine, ADRENALIN is a standby for relieving asthmatic paroxysms. It is a specific in Adams-Stokes syndrome, and is of great value for protein shock, nitritoid crises, serum sickness, urticaria, angioneurotic edema, and other allergic reactions.

In Surgery, ADRENALIN is employed to prolong local anesthesia by delaying absorption of the anesthetic agent, and to control hemorrhage.

In Obstetrics, ADRENALIN is used as a uterine relaxant.

In Anesthesiology, ADRENALIN is used to overcome cardiac arrest.

In Ophthalmology, ADRENALIN reduces intraocular pressure, vascular congestion, and conjunctival edema.

In Otolaryngology, ADRENALIN controls hemorrhage and provides prompt decongestion.

MEDICAMENTA · VERA ·
PD CO.

Parke, Davis & Company
DETROIT, MICHIGAN

FINANCIAL WORRY

We hope that you will never have to use what we have to offer for sale. Strange, isn't it. But to view it from a different angle we certainly have no desire to see you have a misfortune such as a fire—a robbery—an accident or some sickness. Yet the law of average is moving your way. The really strange thing is that few people do what they should to eliminate worries over financial loss. Just check yourself.

This misfortune might never happen to you. But isn't it wise to put away a little money each year into a plan of Accident and Health Insurance that has been critically investigated by your Association so that you won't have to worry about financial loss?

Delay offers no advantage!

CASWELL-ROSS AGENCY

1177 N. W. Bank Building Minneapolis 2, Minnesota
Minneapolis—MA 2585 St. Paul—PR 7004

Insurors to:

Minnesota State Bar Association
Minnesota State Dental Association
Minnesota State Medical Association
Minnesota Society of C. P. A.
Minnesota State Pharmaceutical Assn.
Minnesota Auto Dealers Association
Minnesota Federation of Eng. Societies
Minnesota State Veterinary Medical Soc.
Hennepin County Medical Society
Hennepin County Bar Association
11th Judicial Bar Association
Minneapolis Association of Life Underwriters

Ramsey County Medical Society
Ramsey County Bar Association
St. Paul District Dental Soc.
Minneapolis District Dental Soc.
St. Cloud Dental and Stearns County Medical Society
Duluth District Dental Society
East Central Medical Society
St. Louis County Medical Society
West Central Dist. Dental Society
Northwest Proprietors Association
St. Paul Life Underwriters, Inc.

Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 36 **November, 1953** **Number 11**

Contents

HAND AND FINGER FRACTURES.
Wesley H. Burnham, M.D., Minneapolis, Minnesota ... 1129

WRIST INJURIES.
Edward H. Juers, M.D., F.A.C.S., Red Wing Minnesota ... 1132

OCCULT DISLOCATION OF THE ANKLE.
D. Keith Millett, M.D., and *Myron O. Henry, M.D.*, Minneapolis, Minnesota ... 1135

THE TIMING OF FRACTURE TREATMENT.
Frank S. Babb, M.D., Saint Paul, Minnesota .. 1138

ACCIDENTS—CHIEF KILLER OF CHILDREN.
A. B. Rosenfield, M.D., M.P.H., and *Wm. Allen, M.P.H.*, Minneapolis, Minnesota, and *Emerson W. Storey, B.S., M.S.*, Saint Paul, Minnesota 1141

RUPTURE OF THE INTERVENTRICULAR SEPTUM SECONDARY TO MYOCARDIAL INFARCTION.
John F. Briggs, M.D., Saint Paul, Minnesota .. 1149

CLEIDO-CRANIAL DYSOSTOSIS.
E. C. Paulson, M.D., and *Norman Sterrie, M.D.*, Worthington, Minnesota ... 1152

HEREDITARY HEMORRHAGIC TELANGIECTASIS.
Theodore Konig, M.D., and *John F. Briggs, M.D.*, Saint Paul, Minnesota ... 1154

LABORATORY AIDS TO MEDICAL PRACTICE:

Laboratory Diagnosis of Tuberculosis.
Gerald M. Needham, Ph.D., Rochester, Minnesota ... 1157

HISTORY OF MEDICINE IN MINNESOTA:

Medical History of the County of Yellow Medicine *(Continued)*
Mildred B. Lee, Granite Falls, Minnesota ... 1159

PRESIDENT'S LETTER:

Especially for You ... 1164

EDITORIAL:

Geriatrics—Medical Opportunity ... 1165
Reaction to Reaction ... 1166
Tuberculosis in Minnesota ... 1166

THE DEAN'S PAGE:

University of Minnesota School of Nursing ... 1167

MEDICAL ECONOMICS:

Federal Aid Sought for Medical Care Plans ... 1168
Annual Survey Shows Health Insurance Gain .. 1169
Armed Forces Have Too Many Doctors ... 1170
Government Survey Shows VA Abuses ... 1170

MINNESOTA ACADEMY OF MEDICINE:

Meeting of February 11, 1953 ... 1171
Meeting of March 11, 1953 ... 1171

MINNESOTA DEPARTMENT OF HEALTH:

Hospital Personnel Shortage ... 1172

REPORTS AND ANNOUNCEMENTS ... 1174
WOMAN'S AUXILIARY ... 1178
IN MEMORIAM ... 1182
OF GENERAL INTEREST ... 1184
BOOK REVIEWS ... 1197

Contents of MINNESOTA MEDICINE copyrighted by Minnesota State Medical Association, 1953

Entered at the Post Office in Saint Paul as second class mail matter. Accepted for mailing at the special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 13, 1918.

MINNESOTA MEDICINE

OFFICIAL JOURNAL OF THE MINNESOTA STATE MEDICAL ASSOCIATION

Published by the Association under the direction of its Editing and Publishing Committee

Office of Minnesota State Medical Association,
496 Lowry Medical Arts Bldg., Saint Paul 2, Minnesota.

EDITING AND PUBLISHING COMMITTEE

E. M. HAMMES, Saint Paul
PHILIP F. DONOHUE, Saint Paul
L. M. EATON, Rochester
J. J. HEIMARK, Monterey
C. L. OPPEGAARD, Crookston
T. A. PEPPARD, Minneapolis
H. A. ROUST, Montevideo
O. W. ROWE, Duluth
HENRY L. ULRICH, Minneapolis
A. H. WELLS, Duluth

EDITORIAL STAFF

ARTHUR H. WELLS, Duluth, Editor
GEORGE EARL, Saint Paul, Associate Editor
HENRY L. ULRICH, Minneapolis, Associate Editor

BUSINESS MANAGER

R. R. ROSELL

Annual Subscription—$3.00. Single Copies—$0.40. Foreign and Canadian Subscriptions—$3.50.

The right is reserved to reject material submitted for editorial or advertising columns. The Editing and Publishing Committee does not hold itself responsible for views expressed either in editorials or other articles when signed by the author.

Classified advertising—ten cents a word; minimum charge, $2.00; key number, 25c additional. Remittance should accompany order.

Display advertising rates on request.

Address all communications concerning the journal to Minnesota Medicine, 2642 University Avenue, Saint Paul 14, Minnesota. Telephone Nestor 2641.

A MODERN PRIVATE SANITARIUM

for the Diagnosis, Care and Treatment of Nervous and Mental Disorders

MAIN BUILDING—One of 10 Units in "Cottage Plan"

ST. CROIXDALE ON LAKE ST. CROIX

PRESCOTT, WISCONSIN

Located on beautiful Lake St. Croix, 18 miles from the Twin Cities, it has the advantages of both City and Country. Every facility for treatment provided, including recreational activities and occupational-therapy under trained personnel. Close personal supervision given patients, and modern methods of therapy employed. Inspection and cooperation by reputable physicians invited. Rates very reasonable. Illustrated folder on request.

Prescott Office
Prescott, Wisconsin
Howard J. Laney, M.D.
Tel. 39 and Res., 76

Consulting Neuro-Psychiatrists
Hewitt B. Hannah, M.D., Andrew J. Leemhuis, M.D.
527 Medical Arts Bldg., Tel. MAin 1357, Minneapolis, Minn.

Superintendent
Ella M. Leseman
Prescott, Wisconsin
Tel. 69

Dramatic results
with
HydroCortone®
(HYDROCORTISONE, MERCK)
in Bursitis

Tablets of HYDROCORTONE afford rapid, even spectacular relief in most cases of bursitis. Oral therapy is effective, convenient, and well tolerated.

In acute bursitis, Saline Suspension of HYDROCORTONE Acetate, injected directly into the bursa, is of great value. Relief of pain and increased mobility have occurred within a few hours in many patients treated with economical low doses.

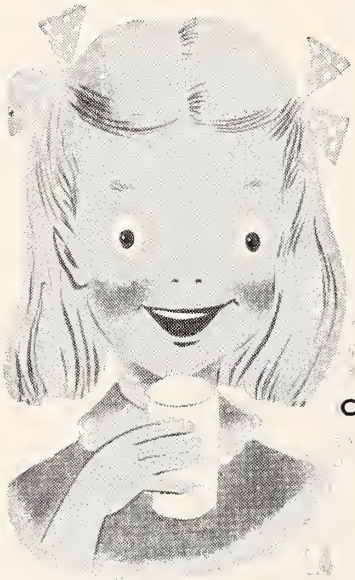
HYDROCORTONE *is the registered trade-mark of Merck & Co., Inc. for its brand of hydrocortisone.*

MERCK & CO., INC.
Manufacturing Chemists
RAHWAY, NEW JERSEY

© Merck & Co., Inc.

Children
take it
without
the least
bit of fuss...

SWALLOWED
WHOLE



CHEWED–
OR IN FOOD
OR LIQUID

DISSOLVED
ON TONGUE

- The Best Tasting Aspirin you Can Prescribe.
- The Flavor Remains Stable Down to the Last Tablet in the Bottle.
- 24 Tablet Battle ... 2½ gr. each 15¢

2½ gr. ◐ ⇨ ◗ 1¼ gr.

Grooved Tablets—
Easily Halved

NEW FLAVORED
CHILDREN'S SIZE
BAYER ASPIRIN

We will be pleased to send samples on request

THE BAYER COMPANY DIVISION of Sterling Drug Inc., 1450 Broadway, New York 18, N.Y.

FLAVORED
Children's Size
BAYER
ASPIRIN
BAYER
Genuine
24 TABLETS
2½ gr ea
PRICE 15¢

THE BUTCHER . . .
THE BAKER . . .
and CANDLE STICK MAKER . . .

In fact persons in every business and profession are confronted now days with a constantly increasing burden of slow and unpaid accounts. If this is true in your practice then the Professional Credit Protective Bureau can really help you.

The Professional Credit Protective Bureau is collecting thousands of past due accounts in the professional field.

The Professional Credit Protective Bureau is a credit control organization that sees that the patient pays direct to the supplier of services. In other words you PAY THE COLLECTION ORGANIZATION AFTER YOUR PATIENT HAS PAID YOU and neither you nor the debtor is embarrassed.

Ninety-two leading trade associations . . . including many medical and dental organizations . . . are recommending this credit control system as part of their service to members.

It will pay you to investigate this tried and true system. Use the attached coupon.

Division of
The I.C. System
724 Metropolitan Bldg.
Minneapolis 1, Minn.

Professional Credit Protective Bureau
724 Metropolitan Bldg., Dept. MM 11-53
Minneapolis 1, Minn.
Please send me full details on the operation of your collection service.

Name ....

Address ....

City .... State ....

Conclusive evidence

of the effectiveness and low toxicity

of Furadantin

in treating bacterial urinary tract infections

is provided in its recent

acceptance by the Council

FURADANTIN®

brand of nitrofurantoin

ACCEPTED
COUNCIL ON PHARMACY AND CHEMISTRY
AMERICAN MEDICAL ASSOCIATION

The N.N.R. monograph on Furadantin states:

"**Nitrofurantoin.—Furadantin (Eaton).—**

Actions and Uses.—Nitrofurantoin, a nitrofuran derivative, exhibits a wide spectrum of antibacterial activity against both gram-positive and gram-negative micro-organisms. It is bacteriostatic and may be bactericidal to the majority of strains of Escherichia coli, Micrococcus (Staphylococcus) pyogenes albus and aureus, Streptococcus pyogenes, Aerobacter aerogenes, and Paracolobactrum species. The drug is less effective against Proteus vulgaris, Pseudomonas aeruginosa, Alcaligenes faecalis, and Corynebacterium species; many strains of these organisms may be resistant to it. However, bacterial resistance to other anti-infective agents is not usually accompanied by increase in resistance of the organisms to nitrofurantoin. The drug does not inhibit fungi or viruses.

Nitrofurantoin is useful by oral administration for the treatment of bacterial infections of the urinary tract and is indicated in pyelonephritis, pyelitis, and cystitis caused by bacteria sensitive to the drug. It is not intended to replace surgery when mechanical obstruction or stasis is present. Following oral administration, approximately 40% is excreted unchanged in the urine. The remainder is apparently catabolized by various body tissues into inactive, brownish compounds that may tint the urine. Only negligible amounts of the drug are recovered from the feces. Urinary excretion is sufficiently rapid to require administration of the drug at four to six hour intervals to maintain antibacterial concentration. The low oral dosage necessary to maintain an effective urinary concentration is not associated with detectable blood levels. The high solubility of nitrofurantoin, even in acid urine, and the low dosage required diminish the likelihood of crystalluria.

Nitrofurantoin has a low toxicity. With oral administration it occasionally produces nausea and emesis; however, these reactions may be obviated by slight reduction in dosage. An occasional case of sensitization has been noted, consisting of a diffuse erythematous maculopapular eruption of the skin. This has been readily controlled by discontinuing administration of the drug. Animal studies, using large doses administered over a prolonged period, have revealed a decrease in the maturation of spermatozoa, but this effect is reversible following discontinuance of the drug. Until more is known concerning its long-term effects, blood cell studies should be made during therapy. Frequent or prolonged treatment is not advised until the drug has received more widespread study. It is otherwise contraindicated in the presence of anuria, oliguria, or severe renal damage.

Dosage.—Nitrofurantoin is administered orally in an average total daily dosage of 5 to 8 mg. per kilogram (2.2 to 3.6 mg. per pound) of body weight. One-fourth of this amount is administered four times daily—with each meal and with food at bedtime to prevent or minimize nausea. For refractory infections such as Proteus and Pseudomonas species, total daily dosage may be increased to a maximum of 10 mg. per kilogram (4.5 mg. per pound) of body weight. If nausea is severe, the dosage may be reduced. Medication should be continued for at least three days after sterility of the urine is achieved."

The NITROFURANS

O_2N R

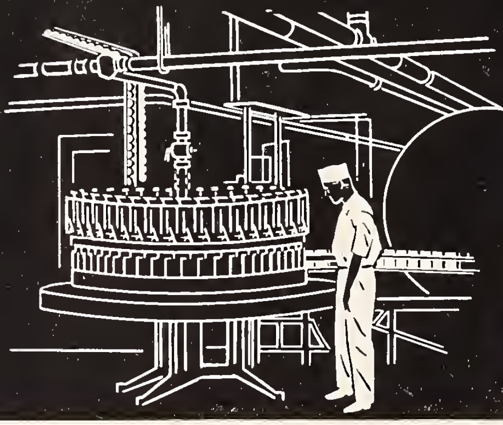
A unique class of antimicrobials

EATON LABORATORIES Inc.

NORWICH, NEW YORK

50 YEARS AGO

TODAY



"...*Always have the milk boiled so as to render it temporarily sterile and prevent souring... Another great advantage in using boiled milk is the protection afforded against infection. It has been proven beyond question... that the specific poisons of typhoid fever, scarlatina, and diphtheria are communicated through the agency of milk, and that these specific poisons are rendered inert by heat at the boiling point.*"*

The availabilty of Baker's Modified Milk makes unnecessary the precautions that were exercised a half-century ago. When using Baker's Modified Milk you can be sure of clean, safe milk from the source to your patient.

POWDER and LIQUID

Baker's Modified Milk is made from Grade A Milk (U. S. Public Health Service Milk Code), which has been modified by replacement of the milk fat with animal and vegetable oils and by the addition of carbohydrates, vitamins and iron.

BAKER'S MODIFIED MILK ASSURES SAFETY IN INFANT FEEDING

*Cheadle—*Artificial Feeding and Food Disorders of Infants*, Sixth Edition (1906)

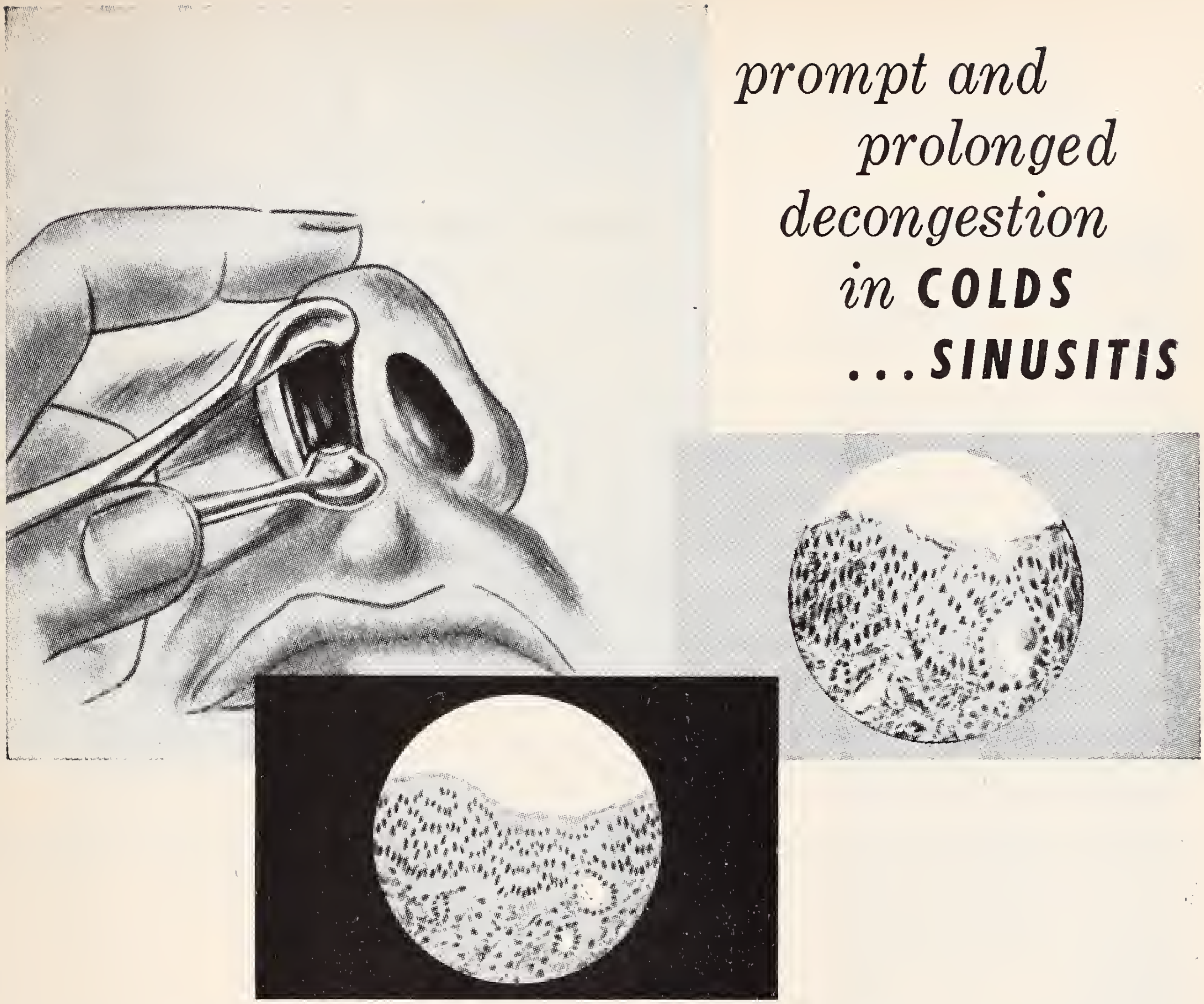
BAKER'S MODIFIED MILK

THE BAKER LABORATORIES INC.

Main Office: Cleveland 3, Ohio
Plant: East Troy, Wisconsin

Division Offices: Atlanta, Dallas, Denver,
Greensboro, N. C., Los Angeles, San Francisco, Seattle

ACCEPTED COUNCIL ON FOODS AND NUTRITION AMERICAN MEDICAL ASSOCIATION



prompt and prolonged decongestion in **COLDS**
...SINUSITIS

Neo-Synephrine hydrochloride, through immediate and prolonged decongestive action, not only restores nasal patency, but also helps to reestablish and protect the physiologic defense mechanisms of the nasal cavity: sinus drainage and aeration.

ACCEPTED COUNCIL ON PHARMACY AND CHEMISTRY AMERICAN MEDICAL ASSOCIATION

Neo-Synephrine hydrochloride is notable for its relative freedom from sting and for virtual absence of compensatory congestion. Furthermore, it does not usually produce systemic side effects such as nervous excitation, cardiac reaction or insomnia.

The decongestive action of Neo-Synephrine hydrochloride is undiminished by repeated use—insuring relief throughout the duration of the illness.

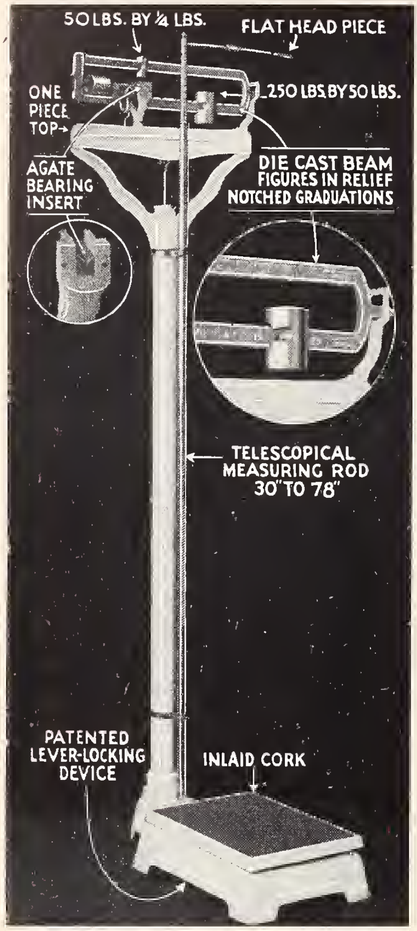
¼% solution (plain and aromatic), 1 oz. bottles
½ and 1% solutions (when stronger vasoconstrictive action is needed), 1 oz. bottles
½% water soluble jelly, ⅝ oz. tubes

Neo-Synephrine®
HYDROCHLORIDE

Winthrop-Stearns INC.
NEW YORK 18, N. Y.   WINDSOR, ONT.

Neo-Synephrine, trademark reg. U. S. & Canada, brand of phenylephrine

P&H PHYSICIAN'S SCALES


50 LBS. BY ¼ LBS.
FLAT HEAD PIECE
ONE PIECE TOP
250 LBS. BY 50 LBS.
AGATE BEARING INSERT
DIE CAST BEAM FIGURES IN RELIEF NOTCHED GRADUATIONS
TELESCOPICAL MEASURING ROD 30" TO 78"
PATENTED LEVER-LOCKING DEVICE
INLAID CORK

P & H Physician's Office Scale

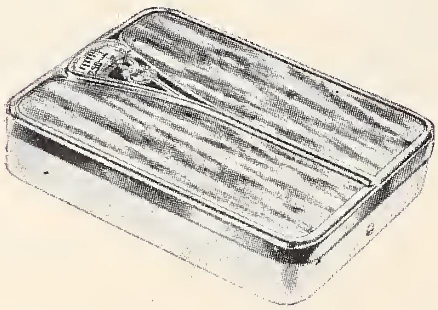
Every detail of this P & H Physician's Office Scale is designed for efficient service. Every item of material is the most substantial known to modern scale engineering. Dependability and permanent accuracy make it the greatest beam scale value in the industry.

All the important features listed are exclusive. The die-cast beam with hardened, knife edge pivots is mounted on agate bearings. All wear is eliminated at this vital point. The one-piece top does away with assembled parts that so often loosen in service and avoids unsightly screws and joints. The two piece, telescopic measuring rod is made of heavy steel tubing, black enameled. It is easy to operate and is graduated by 1/4 inches from thirty to seventy-five inches. The graduations are quickly and easily read. The platform is inlaid rubber for comfort and long wear.

Specifications: Color, standard finish oven-baked white enamel. Capacity, 300 pounds. Size: Platform 10½x14". Space required 11x22". Height overall 60".

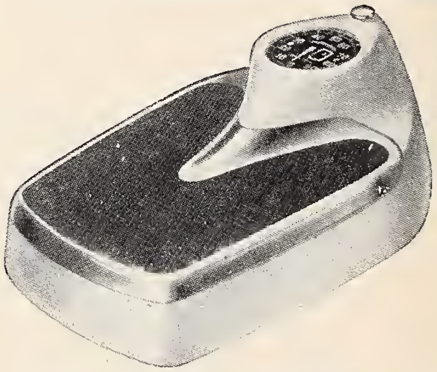
M-1153 P & H Physician's Office Scale....................$57.50 each

P & H Health Scale



Convenient size and shape permits easy storage. Weighs only 5 pounds. Capacity 250 lbs. Full circular metal dial with large numerals. Platform only 2¼" from floor. Platform size, 8x10". Rubber treads, chrome finish on platform. Has magnifying lens on dial.
M-1153-A P & H Health Scale..............$7.95 each

P & H DeLuxe Health Scale



This P & H DeLuxe Health Scale is built for long service. Hardened steel pivots and bearings are used. Dial is easily read, having large numerals. Overall size, 11x16". Platform, 8½ x11x2½". Enameled white finish. Capacity, 300 lbs.
M-1153-B P & H DeLuxe Health Scale
$19.95 each

PHYSICIANS AND HOSPITALS SUPPLY CO., Inc
1400 HARMON PLACE, MINNEAPOLIS 3, MINNESOTA

Pneumonia weather...
the season
for bacterial
respiratory tract
infections

a time
for...

TERRAMYCIN®

BRAND OF OXYTETRACYCLINE

The value of Terramycin in promptly controlling otitis media, severe sinusitis, laryngotracheobronchitis, bacterial pneumonia and virtually all infections of the respiratory tract, due to or complicated by the many organisms sensitive to Terramycin, is now a matter of clinical record.

Because of its excellent toleration and rapid response, Terramycin is a therapy of choice for bacterial respiratory tract infections. Among the convenient dosage forms of Terramycin are Capsules, Tablets (sugar coated), good-tasting Oral Suspension, nonalcoholic Pediatric Drops, Intravenous for hospital use in severe infections.

Pfizer

PFIZER LABORATORIES
Division, Chas. Pfizer & Co., Inc., Brooklyn 6, N.Y.

"PREMARIN"

..."sense of well-being"...

Relief of menopausal symptoms was complete in practically 96 per cent of patients receiving "Premarin" and "General tonic effects were noteworthy..."*

"PREMARIN"® in the menopause

Estrogenic Substances (water-soluble) also known as
Conjugated Estrogens (equine). Tablets and liquid.

*Perloff, W. H.: Am. J. Obst. & Gynec. 58:684 (Oct.) 1949.

5309

Ayerst®

AYERST, McKENNA & HARRISON LIMITED • *New York, N. Y.* • *Montreal, Canada*

DOCTOR:

Will Your Stethescope Be Showing When You're 65?

We're speaking figuratively, of course. But who among us doesn't think plenty about "going to pasture" and enjoying life after 65 instead of facing the old grind. We'd like to be fishin' instead of fussin' when we get about that age. Perhaps travel, golf, hunting or a partial practice is your goal . . . whatever it is, you must plan ahead for it. Here at National Life we've made a specialty of working with professional men. Our policies are tailored to your needs . . . and include:

Retirement Income!

Is your program for life insurance and retirement income all set up and adequate for your future needs? We find many men are uneasy about recent market fluctuations and anxious to take a new look at insurance with guaranteed income for a relaxed retirement.

Disability Income!

Being a doctor you know that the human mechanism is subject to repair . . . sometimes the damage is greater, beyond repair. Such a dark day can be greatly brightened if you have lifetime non-cancellable *disability income . . . an exclusive feature of National Life.

*even though not house-confined

May we check your program with you, Doctor? Just fill in this handy blank, and we'll call you. Of course there is no obligation!

To: Lloyd Swanson, General Agent
National Life Insurance Company of Vermont
1240 Baker Building Minneapolis 2, Minn.

Name ....

Address ....

Town..., Minnesota

Meat...

and the Important Role of Protein in Hemoglobin Synthesis

Although the relationship between iron and hemoglobin formation is widely appreciated, the important role played by protein in hemoglobin synthesis is relatively obscure. Nevertheless, since globin is just as much a component of the hemoglobin molecule as is iron, the continued synthesis of this protein is necessary for normal hemoglobin production.

It has recently been estimated that in the average adult 8 Gm. of globin is destroyed daily.[1] This means "that approximately 14% of the total dietary protein intake of the average adult [female] is required solely for the resynthesis of new hemoglobin. These data reemphasize the importance of adequate protein, as well as iron, intake for the maintenance of a normal rate of hemoglobin synthesis in man."[2]

Because meat is an outstanding source of *both* iron and high quality protein, it is always recommended in generous amounts in the dietary management of hypochromic anemia. These nutritional values, as well as its significant content of B vitamins, also make meat an important component of the daily diet of normal persons.

---

1. Drabkin, D. L.: Metabolism of Hemin Chromoproteins, Physiol. Rev. *31*:345 (1951).
2. The Biosynthesis of Hemoglobin, Editorials, J.A.M.A. *150*:1223 (Nov. 22) 1952.

The Seal of Acceptance denotes that the nutritional statements regarding meat made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

American Meat Institute
Main Office, Chicago...Members Throughout the United States

Upjohn

long-acting
androgen:

Depo-Testosterone

Trademark Reg. U. S. Pat. Off. CYCLOPENTYLPROPIONATE

ACCEPTED COUNCIL ON PHARMACY AND CHEMISTRY AMERICAN MEDICAL ASSOCIATION

Each cc. contains:

Testosterone Cyclopentylpropionate ....50 mg. or 100 mg.
Chlorobutanol .... 5 mg.
Cottonseed Oil ....q.s.

50 mg. per cc. available in 10 cc. vials

100 mg. per cc. available in 1 cc. and 10 cc. vials

The Upjohn Company, Kalamazoo, Michigan

Depo®-Testosterone
Cyclopentylpropionate
Upjohn

only the ORIGINAL Contour PATENTED CHAIR LOUNGE

gives 3 DIMENSIONAL comfort for healthful relaxation

Styles as low as $139.50 . . . easy terms

1. Made in sizes to fit all heights.
2. Balanced body width support . . . to provide proper body alignment.
3. Convex and Concave depth features fit natural body contours

PROVE IT TO YOURSELF . . . TRY THE 5-MINUTE, 5-STAR PROOF TEST IN YOUR OWN HOME . . . AT NO COST . . . NO OBLIGATION!

★ Fit Test
★ Spinal Pressure Release Test
★ Reading Test
★ Floating Test
★ Relaxing Test

Only chairs bearing this trademark are products of CONTOUR chair-LOUNGE Co., Inc., St. Louis, since 1945. *"The Most Imitated Chair in America."*
© Contour Sales, Inc. 1953

PRE-MOULDED TO FIT YOU CONTOUR CHAIR-Lounge TRADE MARK

NOW! CONTOUR DESK-TABLE . . . $26.50
CONTOUR SIGHT-LIGHT . . $26.50

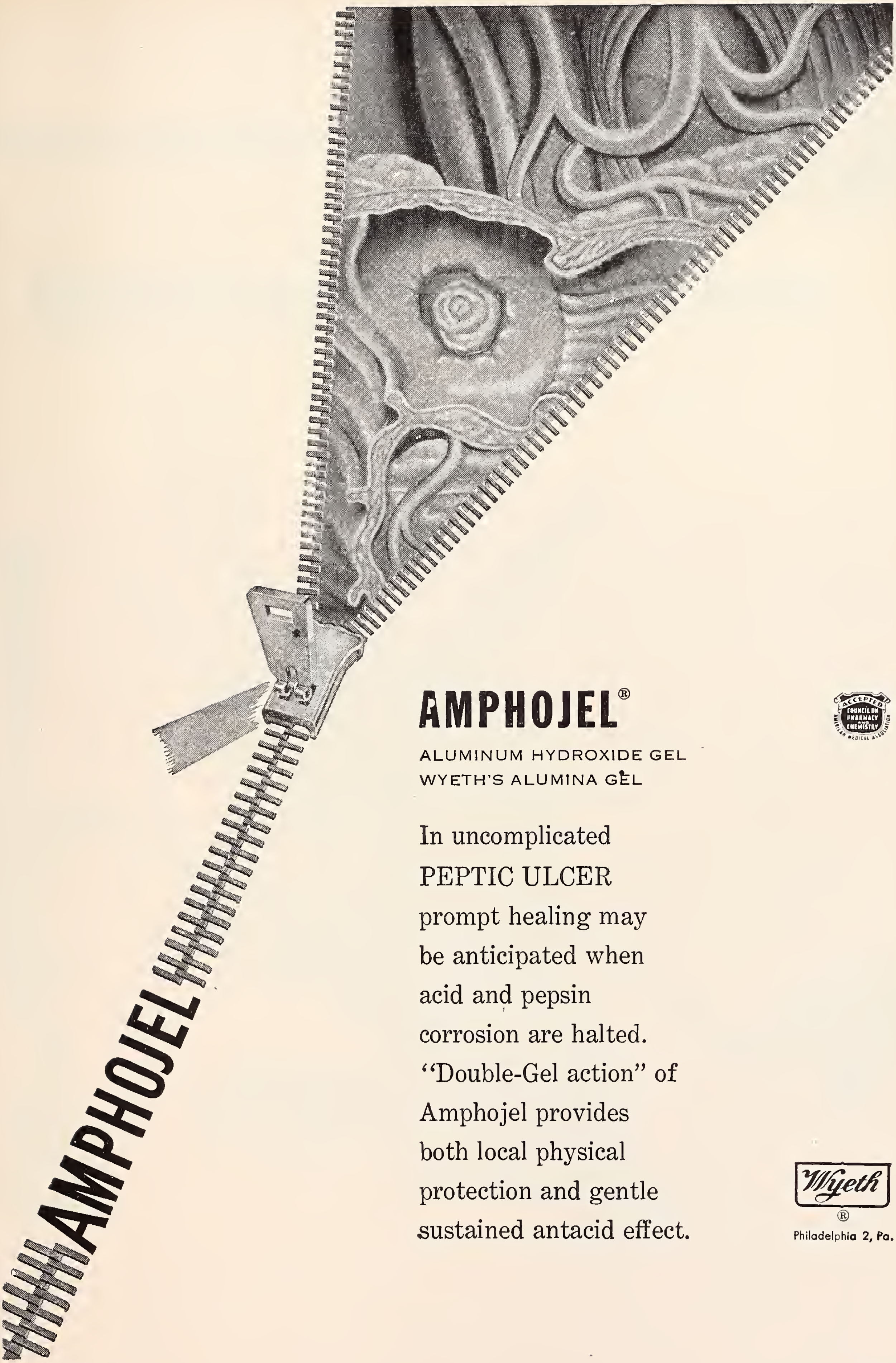
Provides greater comfort when you work . . write . study . eat. Fully adjustable.

A scientifically directed light for greater eye comfort. No glare . no shadow!

Phone GEneva 8262 for Free Home Demonstration

MAIL COUPON
Please send literature:
NAME ....
ADDRESS ....
CITY .... STATE ....

CONTOUR CHAIR LOUNGE, INC.
12 SOUTH 7TH STREET, MINNEAPOLIS, MINN.
(Between Nicollet and Hennepin Ave.
Open Monday and Thursday Evening



AMPHOJEL®

ALUMINUM HYDROXIDE GEL
WYETH'S ALUMINA GEL

ACCEPTED COUNCIL ON PHARMACY AND CHEMISTRY AMERICAN MEDICAL ASSOCIATION

In uncomplicated PEPTIC ULCER prompt healing may be anticipated when acid and pepsin corrosion are halted. "Double-Gel action" of Amphojel provides both local physical protection and gentle sustained antacid effect.

Wyeth®
Philadelphia 2, Pa.

When patients are sensitive to antibiotic

always consider ERYTHROCIN*

A SELECTIVE ANTIBIOTIC

ORALLY EFFECTIVE

against staphylococci, streptococci and pneumococci—especially indicated when patients are allergic to other antibiotics or when the organism is resistant.

A DRUG OF CHOICE

against staphylococci—because of the high incidence of staphylococci resistant to other antibiotics.

A DRUG OF CHOICE

because it is less likely to alter normal intestinal flora than other antibiotics, except penicillin; gastrointestinal disturbances rare; no serious side effects reported.

USE ERYTHROCIN

in pharyngitis, tonsillitis, otitis media, sinusitis, bronchitis, scarlet fever, pneumonia, erysipelas, pyoderma and certain cases of osteomyelitis.

DOSAGE

average adult dose is two 100-mg. tablets every four to six hours. Specially-coated ERYTHROCIN tablets are available in bottles of 25 and 100. Abbott

Trade Mark ERYTHROMYCIN, ABBOTT CRYSTALLINE

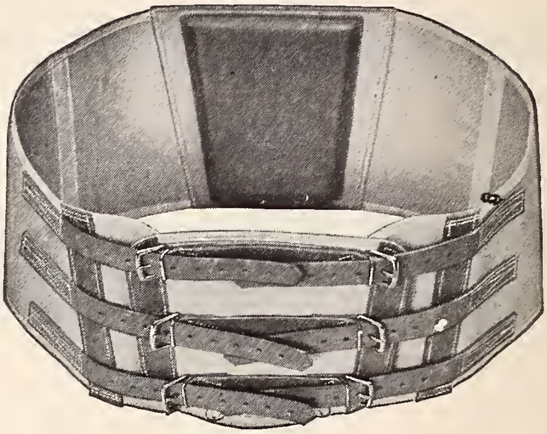
3-234

Popular Type **SACRO-ILIAC BELT**

This high-grade sacro-iliac support is made of orthopedic webbing, 6 inches wide, well reinforced and supplied with perineal straps.

To determine size needed, take measurements around hip, 3 inches below the iliac crest. Stock sizes 30 to 44. Extra sizes available on special order.

Professional Price $5.95



Abdominal Supporters *Elastic Stockings* *Trusses*

C. F. ANDERSON CO., INC.

Surgical and Hospital Equipment

ATlantic 6508, ZEnith 2055 **901 Marquette Ave.**
MINNEAPOLIS 2, MINNESOTA

ACCIDENT • HOSPITAL • SICKNESS

INSURANCE

For Physicians, Surgeons, Dentists Exclusively

ALL PREMIUMS COME FROM PHYSICIANS SURGEONS DENTISTS ALL CLAIMS GO TO

$5,000 accidental death Quarterly $8.00 **$25 weekly indemnity, accident and sickness**	**$15,000 accidental death Quarterly $24.00** **$75 weekly indemnity, accident and sickness**
$10,000 accidental death Quarterly $16.00 **$50 weekly indemnity, accident and sickness**	**$20,000 accidental death Quarterly $32.00** **$100 weekly indemnity, accident and sickness**

COST HAS NEVER EXCEEDED AMOUNTS SHOWN

ALSO HOSPITAL INSURANCE

	Single	Double	Triple	Quadruple
60 days in Hospital	5.00 per day	10.00 per day	15.00 per day	20.00 per day
30 days of Nurse at Home	5.00 per day	10.00 per day	15.00 per day	20.00 per day
Laboratory Fees in Hospital	5.00	10.00	15.00	20.00
Operating Room in Hospital	10.00	20.00	30.00	40.00
Anesthetic in Hospital	10.00	20.00	30.00	40.00
X-Ray in Hospital	10.00	20.00	30.00	40.00
Medicines in Hospital	10.00	20.00	30.00	40.00
Ambulance to or from Hospital	10.00	20.00	30.00	40.00
COSTS (Quarterly)				
Adult	2.50	5.00	7.50	10.00
Child to age 19	1.50	3.00	4.50	6.00
Child over age 19	2.50	5.00	7.50	10.00

$4,000,000.00
INVESTED ASSETS

PHYSICIANS CASUALTY ASSOCIATION
PHYSICIANS HEALTH ASSOCIATION

$19,500,000.00
PAID FOR CLAIMS

51 years under the same management

400 First National Bank Building
Omaha 2, Nebraska

$200,000.00 deposited with State of Nebraska for protection of our members

Pre-Season "SPECIAL SALE!!"
G-E AUTOMATIC BLANKETS

For a limited time only

We are pleased to offer the medical profession the famous General Electric "Sleep Guard" Automatic Blanket at low, low prices.

The General Electric Company, **makes absolutely no therapeutic claims** for the Automatic Blanket, however, where constant even temperature with light weight covering is indicated the advantage is obvious.

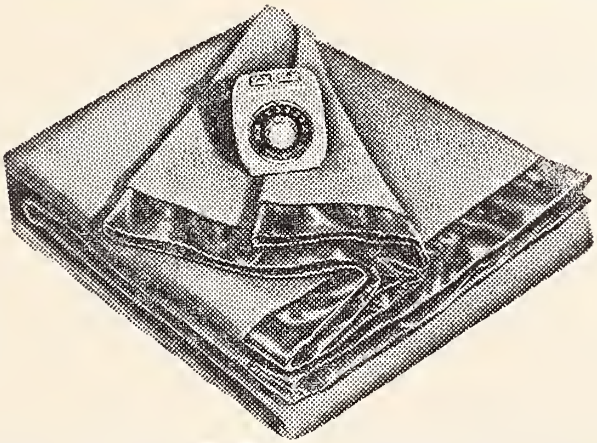
Should you desire to judge for yourself the sleeping comfort to be received from using a General Electric Automatic Blanket, we are hereby extending an introductory offer to the medical profession on **purchases for their own use.**

G-E AUTOMATIC BLANKETS

feature the amazing "Sleep Guard Circuit." No more lumpy thermostats.

G-E AUTOMATIC BLANKETS

won the Lewis and Conger Grand Prize National Safety Award as the "Outstanding contribution to safety in the American home."



6 High Fashion Colors to choose from:

- Citron (Yellow)
- Dresden Blue
- Sprout Green
- Rose Pink
- Flamingo (Red)
- Garden Green

Fill Out Quantity and Color Selection (Limit 2). Enclose Check or Money Order.

Model PB15A4 SINGLE BED ONE CONTROL Size—66" x 86" (Formerly $54.95)	Model PB15A1 DOUBLE BED ONE CONTROL Size—72" x 86" (Formerly $57.95)	Model PB15A2 DOUBLE BED TWO CONTROLS Size—72" x 86" (Formerly $67.95)
YOUR COST ONLY $29.95	**YOUR COST ONLY $39.95**	**YOUR COST ONLY $44.95**
Quantity	Quantity	Quantity ....
Color Selection	Color Selection	Color Selection ....

*Prices include State and Federal Taxes.
(Limited Stocks—Subject to Prior Sale)

Please forward me the above indicated Blanket(s) for my personal use:

Signed ....

DELIVER TO:

NAME (Print) ....

STREET ADDRESS.. CITY....................

Enclosed is my check (or Money Order) in the amount of $.....................

Mail coupon to:

MARIEN APPLIANCE CO.

1684 GRAND AVE. ST. PAUL (5) MINN.
PHONE DESOTO 5557

ANSWERS TO COMMON QUESTIONS about 'Ilotycin'

(ERYTHROMYCIN, LILLY)

Q. What is the status of 'Ilotycin' in the treatment of pneumonia?

In pneumonia caused by pneumococci and staphylococci, 'Ilotycin' is very effective. Doses of 200 mg. every four hours are recommended.

Q. Is 'Ilotycin' effective in urinary tract infections?

Yes, when the causative organism is susceptible to its action and when there is a minimum of mechanical factors such as strictures, stone, and the like.

Q. How long should a streptococcus throat infection be treated with 'Ilotycin'?

The recommended minimum course for any antibiotic is five days. 'Ilotycin' completely eradicates the organisms within five days and thereby prevents recurrence of the infection.

Q. Is there any contraindication to the use of 'Ilotycin' immediately following a parenteral dose of penicillin?

No. 'Ilotycin' does not inhibit the activity of penicillin. There is probably no specific indication for using penicillin in addition to 'Ilotycin.' Experiments both in vitro and with animals have shown no evidence that 'Ilotycin' is either antagonistic to or synergistic with penicillin or the "mycins."

Q. Are coliform bacteria less sensitive to 'Ilotycin' than to other "broad-spectrum" antibiotics?

Yes. There is less possibility of monilia and fungus overgrowth in the intestinal tract with 'Ilotycin,' since the predominant organisms of the normal intestinal flora are relatively insensitive to the antibiotic action of 'Ilotycin.'

'Ilotycin' is supplied in 100 and 200-mg. specially coated tablets . . . at pharmacies everywhere.

ILOTYCIN
(ERYTHROMYCIN, LILLY)
CRYSTALLINE

Lilly THE ORIGINATOR OF ERYTHROMYCIN

Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 36 November, 1953 Number 11

HAND AND FINGER FRACTURES

WESLEY H. BURNHAM, M.D.
Minneapolis, Minnesota

IT IS AN axiom in fracture treatment that the restoration and preservation of function are of fundamental importance. Nowhere must this principle be kept so constantly in mind as in hand fractures. The hand is an organ of dexterity, and the functions of the rest of the upper extremity are crude by comparison. Little useful function remains in the extremity after hand function is lost. A common and serious error among physicians is to consider finger and hand fractures as minor injuries because the parts are small. To obtain a good functional result from these injuries commonly requires a much higher grade of skill and attention to detail than is required for many "major" fractures of the long bones.

A knowledge of the function and anatomy of the hand is essential to intelligent treatment. The chief functions of the hand are thrust, hook, grasp and pinch.

Thrust is the simple function of pushing, which can be done with a flat hand or a closed fist. It is the crudest function and can be performed after amputation of the hand.

Hook is that function employed in carrying a pail, pulling levers, or hanging from the hands. It does not require the use of the thumb. It is still present when all finger joint motion is lost provided the ankylosis is in a position of flexion.

Grasp is employed in handling most of the tools of heavy labor and is typified in the use of a hammer, a saw, a shovel, and a great many other tools. The thumb is necessary to the best performance of this function.

Pinch is the most exacting of all. It cannot be performed without the thumb. It can be done with only slight motion in one finger and none in the thumb provided the parts are in the proper position of opposition. It is the position of work for precision and delicacy.

Watson-Jones[1] has given eight principles in the treatment of finger injuries which should be remembered by every practitioner who treats hand fractures.

1. *The Injured Finger Must Be Immobilized.*—This permits most rapid healing. The increased exudation which results from early exercise leads to stiffness.

2. *The Injured Finger Must Be Immobilized In Flexion.*—This is the position of function as well as that of easiest reduction in most cases. It permits complete exercise of the other fingers, which cannot be done because of the tendon connections if the finger is fully extended. The tongue blade is for depressing tongues, not immobilizing fingers.

3. *No Finger Except the Injured Finger Must Be Immobilized.*—To do so is usually a matter of convenience to the surgeon and not in the best interest of preserving hand functions.

4. *Every Uninjured Finger Must Be Actively Exercised.*—As has been stated, the object of treatment must be to preserve as well as to restore function in the hand.

5. *Passive Stretching Must Be Rigidly Avoided.*—It causes exudation and the formation of further adhesions and scar tissue. Only active exercise may be used.

Read at the Centennial Meeting of the Minnesota State Medical Association, Saint Paul, Minnesota, May 18, 1953.

6. *Fractures of the Phalanges Must Be Reduced and Immobilized With Special Care.*—The phalanx is the floor of the tendon sheath, and minor displacements lead to loss of function. Because of the small size of the phalanges, a given degree of angulation appears to be less than in a long bone. A 15-degree dorsal angulation in a proximal phalanx will prevent the tip of a finger from touching the palm, and a similar degree of palmar angulation will prevent slipping the hand into a narrow space because of loss of extension. A few degrees of rotation may result in overlapping of the fingers during grasp and in significant handicap.

7. *Compound Finger Injuries Must be Treated by Immediate Operation.*—No one would question the necessity of immediate treatment of a compound fracture of a tibia, yet the occupational disability is likely to be less from the neglect of this injury than from a smaller and less bloody finger injury. Every hand wound deserves a surgeon's most diligent and skillful attention to prevent infection and to restore the parts as perfectly as possible.

8. *The Thumb Must Not Be Amputated.*—Not less than 40 per cent of the function of the hand is dependent upon the thumb. A thumb which has been denuded can be covered with skin by grafting and be useful even if joint motion is lost.

Many accepted textbooks teach methods of treatment which violate these principles. Such methods are born of laziness or ignorance and the discerning physician will not employ them.

A blow on the tip of the finger while the extensor tendon is tense may result in an avulsion fracture of the extensor tendon attachment to the distal phalanx or a rupture of a tendon near this point. This leads to the deformity of mallet finger or "baseball finger." The tendon and the fragment retract as far as permitted by the middle slip of the tendon, which attaches to the middle phalanx. Approximation of the fragments by simple extension of the distal phalanx is seldom accomplished and a permanent mallet finger deformity is the common result. Approximation of the fragments of bone or tendon can be accomplished, however, by flexing the middle joint at the same time that the distal joint is hyperextended. Since the lateral slips of the tendon move in a shorter path around the sides of the joint as the middle joint is flexed, the relaxation of the distal attachment permits approximation and union will take place in five to six weeks if the position is maintained.

Avulsion of the attachment of the middle slip of the extensor tendon to the middle phalanx results in a deformity of flexion at the middle joint and extension at the distal joint. This injury must be immobilized in a position of extension at the middle joint and flexion at the distal joint.

Fractures of the tufts of the distal phalanges do not require more than simple protection except when compounded. Infection is a danger when hemorrhage escapes from beneath the nail. Caution must be exercised in drilling the nail for release of pressure because of the risk of infection.

Fractures of the shafts of the middle and proximal phalanges usually are reduced by placing them in flexion. Traction of moderate degree assists in maintaining reduction. Fractures involving the finger joints usually require continuous traction in the flexed position. This may be obtained by pulp, fingernail, or skeletal traction. Boehler employs a volar wire splint attached to an arm cast with traction which may be obtained by bending the splint after attaching the traction wire to the end. Rubber band traction over the bent splint is also satisfactory. It should be pointed out that each of the flexed fingers points toward the tubercle of the scaphoid bone and does not parallel the corresponding metacarpal. When the finger is immobilized it must be made to point in this direction and thus avoid deformity from rotation.

A common type of metacarpal fracture in young men is the depressed knuckle from fighting with a bare fist. This is found most often in the neck of the fifth metacarpal with the distal fragment angulated toward the palm. This fracture cannot be readily reduced nor reduction maintained by an extension splint. Reduction is best accomplished by flexing the metacarpophalangeal joint 90 degrees and employing the proximal phalanx as a prop or lever to push dorsally on the distal fragment while counter pressure is maintained over the shaft of the metacarpal on the dorsal aspect. Immobilization should be in this same flexed position with appropriate padding over the pressure points. The finger can be released after two weeks and slight pressure substituted under the metacarpal head in the palm for an additional two weeks.

Oblique fractures of the metacarpal shafts tend to overriding with shortening of the knuckle. This is not a disabling deformity and simple protective splinting by plaster which extends over the dorsal and volar aspects of the bone is sufficient for good function. Permitting the fingers to freely flex controls rotation in fractures of the third and fourth metacarpals. If shortening of the knuckle is of cosmetic importance, traction on the finger over a curved splint will restore length. This traction should not be in a position of extension, as with a banjo splint, which prohibits full flexion of the uninjured fingers and leads to contracture of the collateral ligaments at the metacarpophalangeal joints with loss of flexion. Since the collateral ligaments are kept taut when the joint is in flexion, immobilization in this position does not lead to loss of motion due to their contracture.

Transverse fractures of the metacarpals may angulate and produce a prominence of the fracture site on the dorsum. This is usually controlled by a properly molded plaster after reduction. Open reduction is occasionally necessary for displaced transverse fractures.

Fractures of the first metacarpal require special consideration. These fractures usually occur near the base. Transverse fractures usually lead to angulation of the distal fragment toward the palm. Lack of reduction may limit span of the hand. After reduction, immobilization should be in abduction with the thumb in a position of opposition to the fingers. The pressure should be at the metacarpal head. The metacarpophalangeal joint should not be hyperextended.

Fractures beginning on the palmar site of the first metacarpal and extending into the articulation with the greater multangular permit dislocation of the dorsal fragment and shaft. This is known as Bennett's fracture—dislocation of the thumb. This is an unstable fracture which must be treated by continuous traction during the healing period of about four weeks. A short arm cast is applied to which a wire traction bow is attached. Collodion and gauze provide adequate purchase on the skin and rubber bands of appropriate size supply traction.

Crushing injuries of the hand present complex problems of immobilization. The presence of soft tissue wounds may make the usual methods of immobilization difficult or impossible. It is of greatest importance that such hands be immobilized in the position of function. A practical means of fixation in the early treatment period is the "universal hand splint" of stamped aluminum which is available through surgical supply dealers. This maintains the functional position of all parts.

Man depends upon the strength, mobility, and dexterity of his hands in the pursuit of his livelihood. Injuries to the hand should be treated with respect and with skill.

Reference

1. Watson-Jones, Reginald: Fractures and Joint Injuries. Third Edition. Baltimore: Williams and Wilkins, 1946.

U. S. IMPROVES BUDGET CONTROL

Federal contributions to states for vocational rehabilitation programs will be put under closer budgetary control and gradually reduced under a new system set up by the Department of Health, Education, and Welfare. The new plan was instituted as a result of a rider to DHEW's appropriations bill, inserted by Congress at the request of the Budget Bureau.

Until now, vocational rehabilitation grants to states have fluctuated, with the federal government committed to match dollar-for-dollar money spent by the states for administration and 50 per cent of the cost of physical restorations, training and patient transportation.

Because there was no definite ceiling for each state, the federal Office of Vocational Rehabilitation frequently had to dip into a current appropriation to meet its share of a state's cost for previous years. Effective for this year, OVR allocates to each state a set sum of money, based on the overall appropriation, this year of about $23 million. Each allocation will be based on a percentage of the money the federal government granted to the state the previous year. For the current fiscal year, the allocation to each state will be 92.5 per cent of the U. S. share for fiscal 1953. However, if the state wants to match the lower federal allocation and then spend more money, the federal government will pay one-fifth of the additional costs, within limits set by OVR.

WRIST INJURIES

EDWARD H. JUERS, M.D., F.A.C.S.
Red Wing, Minnesota

WRIST injuries in the form of fractures, dislocations, and sprains continuously present to the physician a trying problem. The goal in the treatment of these injuries is to obtain good functional and anatomical results. A representative series of cases is to be presented along with a method of managing each type of case. Proper selection of treatment, that is, the method of reduction and maintaining reduction, often calls for wide experience.

First, a manipulative maneuver is to be described. The simple fractures at the wrist may be easily and quickly reduced by this maneuver. Figure 1 shows the patient in a supine position. The elbow is flexed at a right angle (local or general anesthesia may be used.) The operator grasps the patient's hand as shown. The patient's hand is grasped at the thumb and thenar eminence by the operator's corresponding hand. That is, the operator's right hand grasps the right thumb of the patient, or the left hand of the operator grasps the patient's left thumb and thenar eminence. Countertraction is produced by dropping a sling to the floor and anchoring the same by the operator's foot, or by having an assistant make pressure on the arm. Traction at the wrist can then be applied to any desired degree of force. The impaction can be broken and the fragment of the radius reduced by placing the thumb of the free hand over the distal end of the radius. The index, middle, and ring fingers are placed over the volar side of the forearm. After the reduction has been completed, the extremity is immobilized in a sugar-tong type of splint moulded out of plaster of Paris. Figure 2 shows application of the splint.

This type of splint prevents supination and pronation of the forearm. The completed splint should not extend beyond the distal flexor crease of the palm (Fig. 3). After completion of the splint, a compression dressing is applied around the fingers and thumb to prevent edema (Fig. 4). Padding should be placed between the fingers in order to avoid maceration of the skin. In bandaging this padding, it is preferable *not* to use elastic bandage. The latter may lead to some pressure necrosis of the fingers.

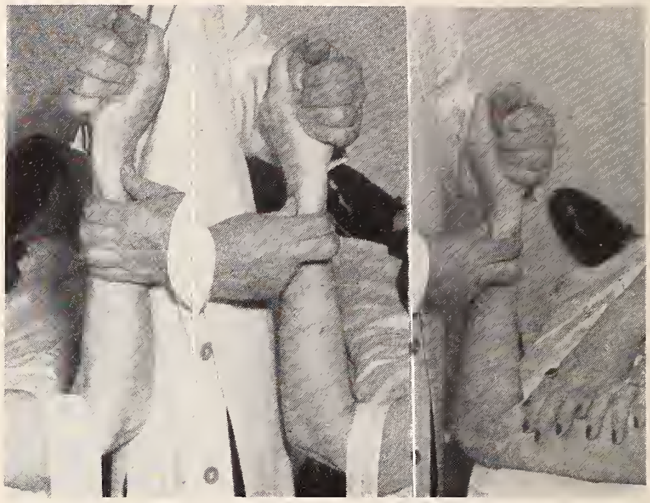


Fig. 1. Demonstration of manipulative maneuver.

Simple Colles' fractures and epiphyseal separations (Fig. 5) should be treated in the manner described. The more complicated injuries of the comminuted type should be reduced by means of a traction apparatus. Skeletal fixation is often necessary in order to maintain reduction. Two half pins or through and through Kirschner wires may be used (Fig. 6 and Fig. 7). Two half pins, one inserted into the base of the second and third metacarpals, and the other into the proximal shaft of the radius, are the most satisfactory. These pins may be inserted before reduction is carried out in the traction apparatus.

Oblique fractures of the radius, or radius and ulna may be reduced and the position maintained by means of an intramedullary Kirschner wire (Fig. 8). The wire is inserted through a drill hole made under the direct vision through an operative incision. Postoperative fixation by means of a sugar-tong splint is usually adequate immobilization. The pin is permitted to protrude through the operative site and it is removed after adequate callous has developed to maintain satisfactory position of the fragments. Three to six weeks of fixation is usually necessary.

The radiographs should always be carefully in-

Read at the Centennial Meeting of the Minnesota State Medical Association, Saint Paul, Minnesota, May 18, 1953.

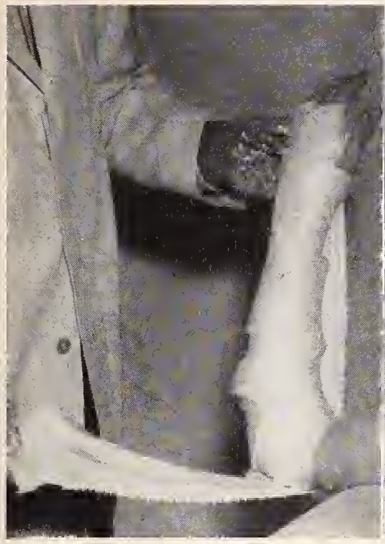


Fig. 2. Application of splint.

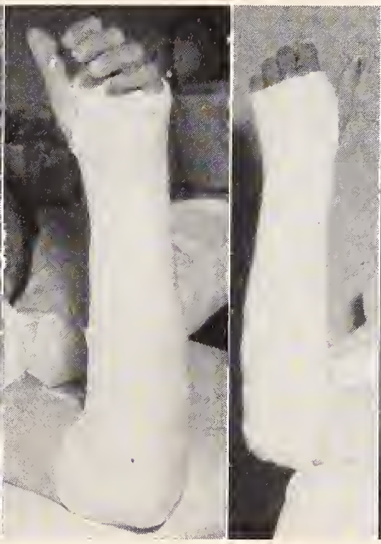


Fig. 3. Completed splint.

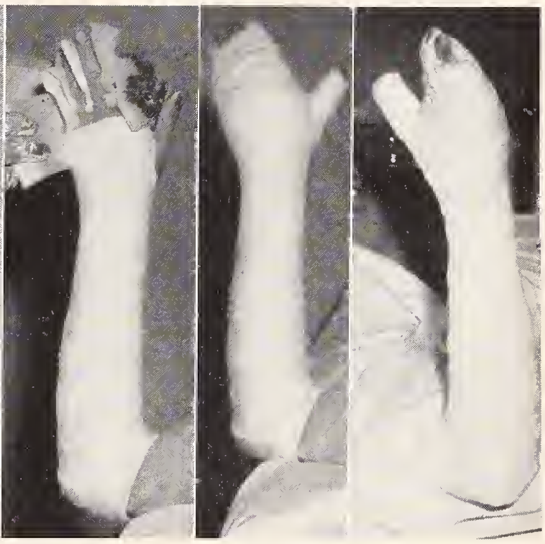


Fig. 4. Application of pressure bandage.

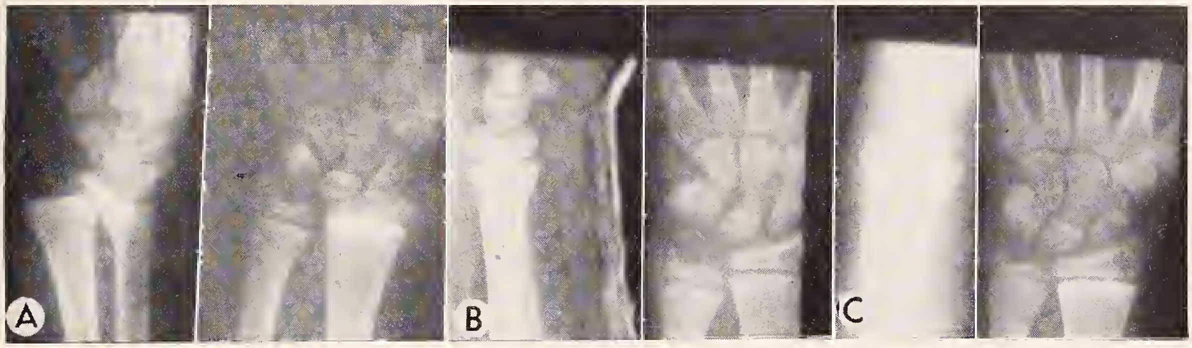


Fig. 5. Case of complete epiphyseal separation. A. Before reduction. B. After reduction. C. Seven weeks after injury.

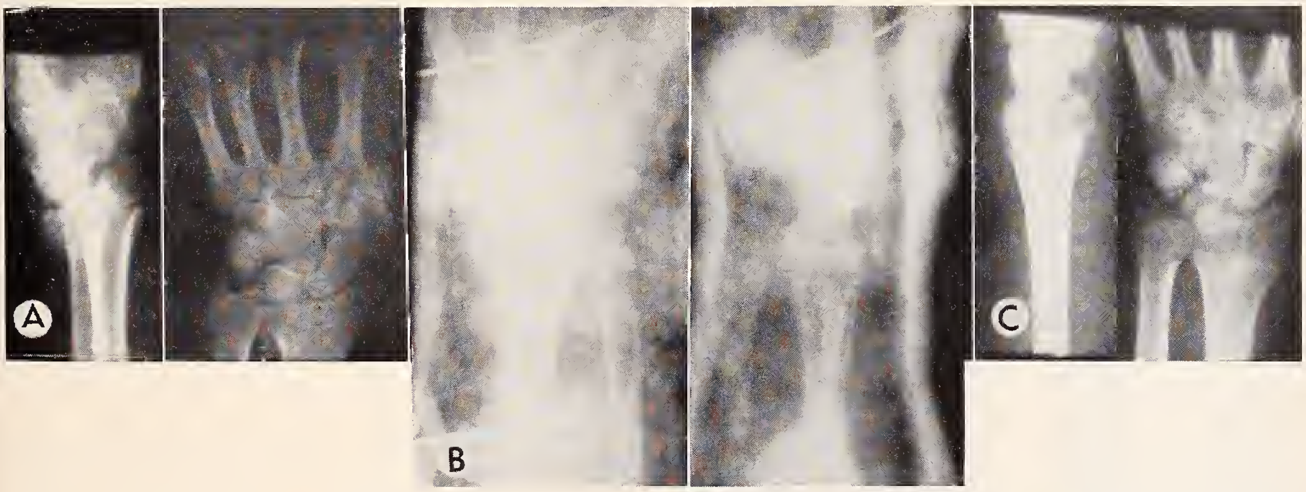


Fig. 6. Severely comminuted Colles' fracture. A. Before reduction. B. After reduction and fixed traction in cast. C. Seven weeks after injury.

spected to rule out fractures of the carpal bones, especially fractures of the carpal navicular. Unusual injuries such as dislocation of the carpal semilunar bone may be encountered (Fig. 9a). Perilunar dislocations are also occasionally found (Fig. 9b). These injuries if not recognized and if not treated early may result in considerable disability.

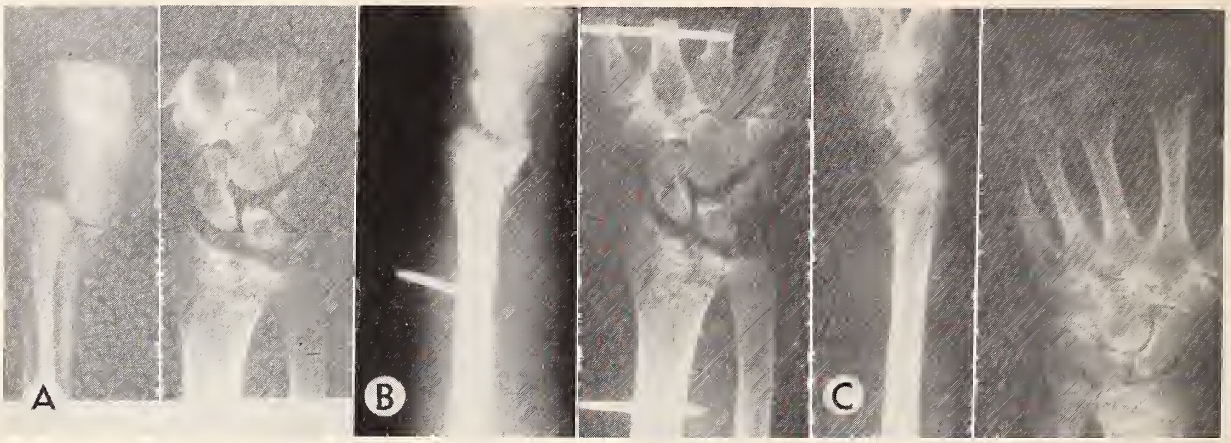


Fig. 7. Severely reversed Colles' fracture. A. Before reduction. B. After reduction and skeletal fixation with two pins. C. Six weeks after injury.

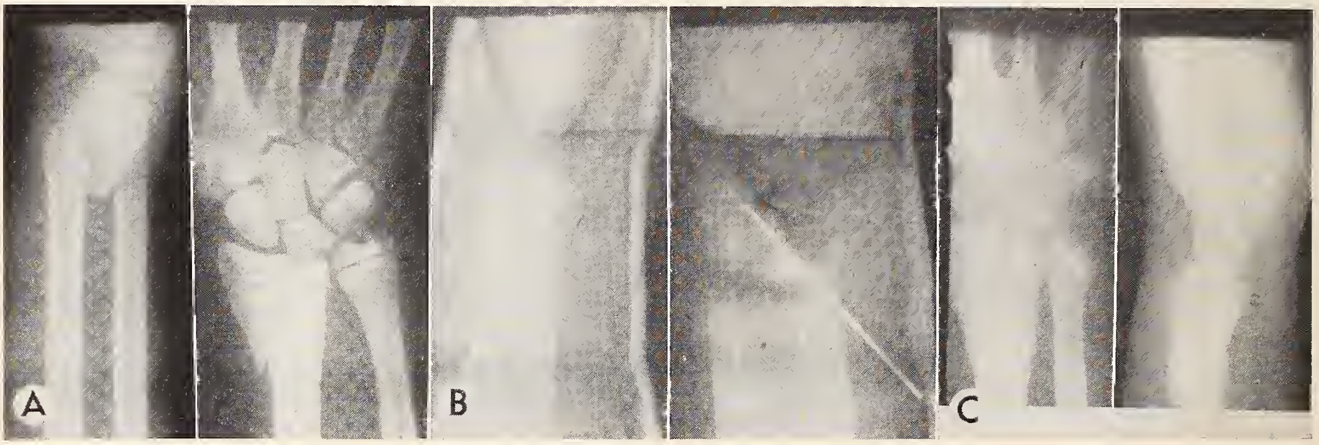


Fig. 8. Oblique fracture of radius. Reduced and transfixed by a single intramedullary Kirschner wire. Immobilized in a sugar-tong plaster of Paris splint. A. Before reduction. B. After reduction. C. Eight weeks after injury.

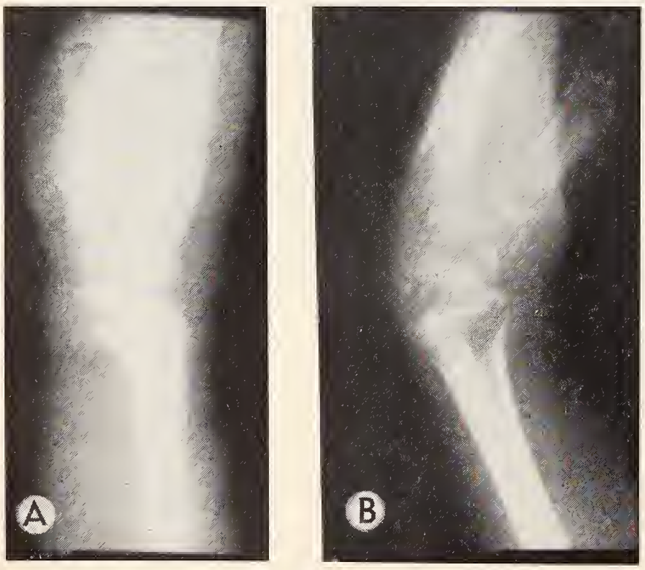


Fig. 9. A. Semilunar dislocation, reduced by finger-trap traction apparatus and manipulation. B. Perilunar dislocation, eight weeks old. Treated by excision of the semilunar bone and later a radial-carpal fusion.

Summary

1. Description of a simple manipulative maneuver for the reduction of Colles' fractures.

2. Immobilization of fractures at the wrist with sugar-tong plaster of Paris splint in order to prevent rotation of the forearm. The splint must stop at the flexor crease of the palm.

3. Emphasis on the use of compression dressing over the fingers for four to seven days to prevent edema of the hand and fingers, thus avoiding ischemic contracture of the intrinsic muscles of the hand.

4. Evaluation of fixed traction to maintain reduction of comminuted or oblique fractures.

5. Emphasis on the importance of recognizing unusual injuries of the carpal bones, e.g., dislocation of the semilunar bone, perilunar dislocation, and fractures of the carpal navicular.

OCCULT DISLOCATION OF THE ANKLE

D. KEITH MILLETT, M.D., and MYRON O. HENRY, M.D.
Minneapolis, Minnesota

MANY so-called "sprained" ankles are not sprains at all. They are in reality much more serious injuries—spontaneously reduced dislocations of the ankle joint. Following a forcible inversion injury of the ankle, the lateral ligaments are often partially or completely torn, allowing the talus to dislocate from the ankle mortise without a fracture of any of the bones making up the ankle joint. In all except rare cases following severe trauma, such a dislocation is reduced spontaneously by the pull of the peroneal muscles. The usual x-ray examination shows no fracture or deformity of the ankle joint and the diagnosis, by exclusion, is "sprained ankle." Since the true injury remains hidden to the usual methods of examination, we have chosen to refer to it as an *occult dislocation of the ankle.*

We wish to call special attention to this entity and to emphasize the importance of a complete examination of any ankle joint injury to establish the presence or absence of this condition. Proper treatment is contingent upon proper diagnosis. There is a well known old saying that "a sprain is worse than a break." This may often be true, not because the injury is really more severe, but because the real diagnosis is overlooked and the subsequent treatment is therefore inadequate. Although the recent literature contains several reports mentioning the frequency of this injury, most are passed over as "sprains" and treated as minor injuries. These injuries are the "sprains" that yield poorer results than some fractures of the ankle. They often result in chronically weak, unstable ankles subject to recurrent "sprains," subluxations, or dislocations of the ankle following relatively minor twists.

The ankle joint is a perfect hinge joint supported on the medial side by the strong deltoid ligament and on the lateral side by three separate ligamentous bands: the anterior talo-fibular ligament, the posterior talo-fibular ligament, and the calcaneo-fibular ligament as the middle band. It is obvious, and has been shown, that the lateral capsule of the ankle joint receives most of its support from the anterior talo-fibular ligament when the foot is plantar flexed; the calcaneo-fibular ligament when the foot is in a neutral position of 90 degrees and the posterior talo-fibular ligament when the ankle is dorsiflexed. However, most inversion injuries of the ankle occur when the ankle is partially plantar flexed causing injury to the anterior talo-fibular and calcaneo-fibular ligaments. The exact position of the foot, the force of the inversion, and the state of contraction of the peroneal muscles determine which of the ligaments are injured and to what extent.

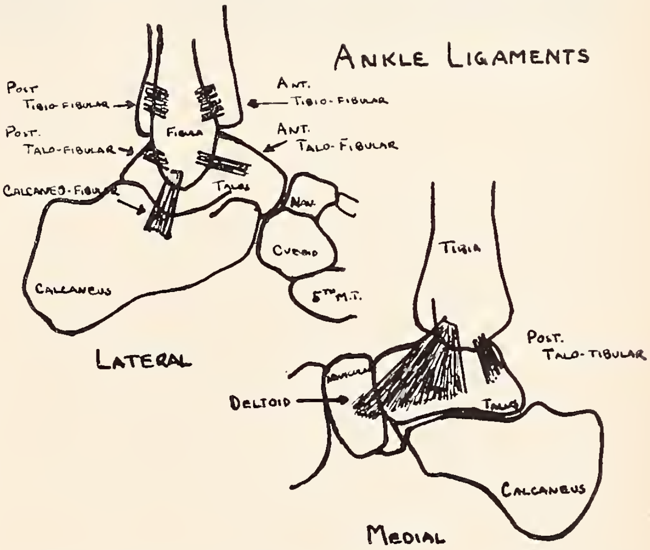


Fig. 1. Diagram showing the ligaments of the ankle joint and direction of their fibers.

A true *ankle sprain* is a partial stretching or minor tearing of the ligaments about the ankle joint without dislocation. Complete tearing of the ligaments may allow the talus to dislocate or tip in its mortise. In the absence of a fracture, the dislocation rarely persists. When it does, the deformity and the serious nature of the injury are obvious to the patient and the physician and the treatment is consequently usually vigorous. Much more frequently, however, the dislocated talus is spontaneously and instantly reduced at the time of the injury so that neither the patient nor the doctor sees the extent of the deformity and consequently does not realize the seriousness of the injury.

Read at the Centennial Meeting of the Minnesota State Medical Association, Saint Paul, Minnesota, May 18, 1953.

Because of the seriousness of the injury and the frequency with which this condition is overlooked and treated for a lesser injury, we believe that every severely "sprained" ankle should be considered an occult dislocation until it is proved to be otherwise.

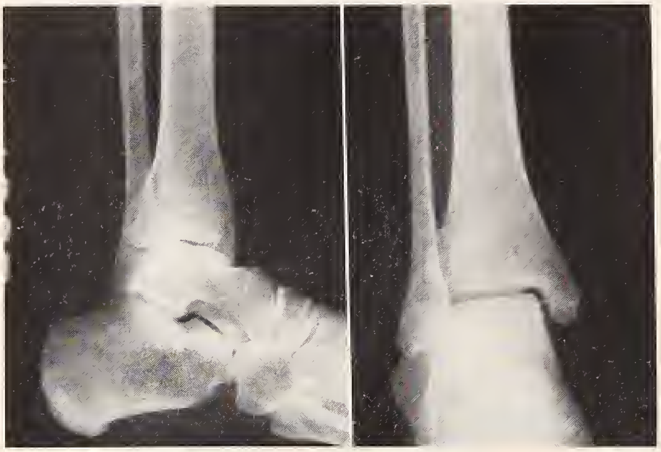


Fig. 2. (a) Routine lateral view of the ankle and (b) routine anteroposterior view. These views show no abnormality.

These injuries usually occur while the patient is walking over irregular terrain, or otherwise makes a mis-step causing the foot to invert suddenly under the force of the body weight. Women's shoes with narrow, high heels and men's shoes with run-over heels add to the hazard. The twist occurs too suddenly for the peroneal muscles to contract and assist the lateral ligaments in supporting the ankle joint. Thus, the sudden force stretches and tears the ligament and forces the talus out of its mortise.

The symptoms are similar to those of a sprain, but usually more severe. Swelling and ecchymosis usually occur at the site of, and distal to, the point of injury. Pain is a usual occurrence and is aggravated by motion of the affected part, especially motion in the direction of injury. The examiner may frequently be able to palpate a sulcus below the lateral malleolus and feel the talus tip out of the mortise as he inverts the ankle in the direction of injury. Most often there is point tenderness over the involved ligament. Frequently a large subcutaneous hematoma develops rapidly.

If an occult dislocation of the ankle is suspected from the history and physical findings, confirmation of the diagnosis depends upon proper x-ray examination.

Routine anteroposterior, lateral, and oblique x-rays of the injured ankle should be taken and studied as the first step. If no fracture is present, the integrity of the lateral ligaments of the ankle should be determined by an anteroposterior x-ray taken while the ankle is forcibly inverted in the direction of the injury. The technique of inverting the ankle for the x-ray is very important because if it is not properly done, the results will be misleading. Someone thoroughly acquainted with the mechanism of the injury and the purpose of the procedure should hold and invert the ankle while the x-ray is taken.

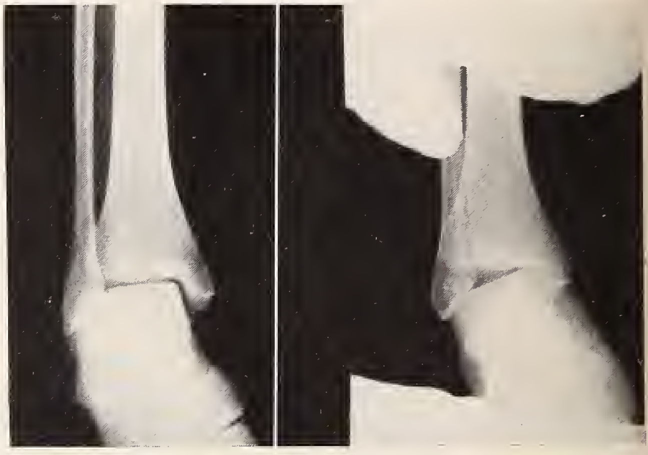


Fig. 3. (a) Anteroposterior view of the ankle improperly inverted. The patient was told to invert her own ankle. (b) Anteroposterior view showing proper method of forced inversion. Note the lead-gloved hands above the ankle and grasping the heel and instep. The talus tips in the mortise revealing an *occult dislocation.*

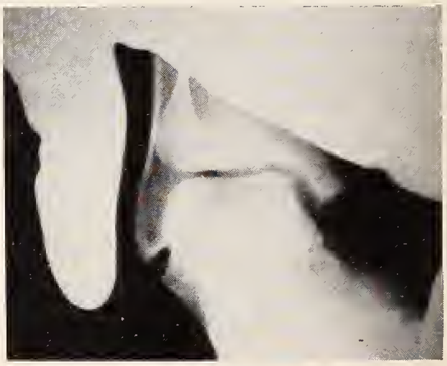


Fig. 4. Anteroposterior view of a normal ankle in forced inversion. Note that the ankle joint surfaces remain parallel and no tipping occurs.

The examiner should wear lead gloves to protect his hands because adequate inversion cannot be accomplished without a firm grasp just above the ankle with one hand, and around heel and instep with the other hand. If the examiner's hands do not appear on the x-ray picture, the procedure probably has not been properly carried out. The ankle is inverted in the direction of the injury as determined by the history of the mechanism of the injury, correlated with the location of the swelling and point of maximal tenderness. If every detail is made in readiness before the actual twisting of the ankle, so that the examiner and technician work together as a team, the manipulation can be accomplished with a minimal amount of discomfort to the patient. It is wise to explain your intentions to the patient and forewarn him of the possibility of some pain. In this way, his co-operation for better relaxation may be obtained. Some authors have advocated the use of anesthesia, either general or local, while making the inversion examination. While this may be advantageous in some cases, we have not found it necessary in most of our cases. Without anesthesia, this examination is a simple office procedure which can be carried out routinely in only a few moments. It is certainly much better to take the inversion x-ray without anesthesia than to omit the test entirely for want of anesthesia. Comparable inversion films of the opposite ankle may often be helpful in interpreting the x-ray pictures. If the lateral ligaments are intact, inversion of the foot occurs at the subtalar joint so that the articular surfaces of the tibia and talus remain parallel. If the ligaments are torn or avulsed, inversion also occurs at the ankle joint so that the talus tips in the ankle mortise and the articular surfaces of the tibia and the talus form an angle.

Before the proper treatment of an individual case can be decided upon, it must first be established whether the present injury is a fresh or acute occult dislocation, or if it is a recurrent or chronic subluxation of the ankle as a result of a previous injury. A history of previous recurrent "sprains" would suggest that the present injury may be a recurrence of an old dislocation and much past the point of maximal benefit from immobilization. If doubt exists, the injury should be treated as a fresh case.

Acute occult dislocations of the ankle should be immobilized in a snugly fitting plaster-of-Paris cast with a minimal amount of padding. The foot and ankle should be placed in the neutral position or in slight eversion to assure close apposition of the ends of the torn ligaments. Ambulation is permitted with a walking appliance on the cast as soon as the cast is dry and the initial pain and swelling have subsided. It may be necessary to change the cast if it becomes loose with the subsidence of the edema. At the end of four weeks, the cast may be replaced with an Orr brace having an inside bar, an outside "T" strap, and free ankle joint motion. This is attached to a firm, low-heeled oxford with a 1/8 inch lift on the outer border of the heel to protect the injured ligament. The patient must not bear weight without this appliance for at least four more weeks. In addition, the foot and ankle are bound with an elastic adhesive dressing for at least two weeks after the removal of the cast, or until all the tenderness has disappeared. Following this, a plain elastic bandage may be necessary to control swelling until normal vascular equilibrium is re-established.

Recurrent or chronic subluxations of the ankle joint require a different therapeutic approach. Because of inadequate immobilization at the time of the initial injury, the torn ligaments may have healed loosely in a relaxed position, or not at all. Therefore, they give little support to the ankle joint and allow recurrent "sprains" from trivial twists. Plaster or adhesive immobilization now may assist in the control of the acute symptoms of pain and swelling but accomplishes little in gaining a permanently stable ankle. These may be treated conservatively by applying a firm oxford with a low, broad heel and cautioning the patient to avoid re-injuring the ankle. If deemed necessary, an Orr brace may be used to add protection. However, if the patient is either young or very active, and particularly if his occupation demands a secure ankle for his safety, we feel that an operation should probably be performed to reconstruct the torn ankle joint ligaments. In this procedure, the tendon of the peroneus brevis muscle is detached superiorly and laced through drill holes in the distal end of the fibula and neck of the talus in such a manner as to reconstruct the torn ligaments. The after care is the same as for the acute occult dislocation.

Conclusions

1. Although most ankle sprains are relatively minor injuries, occult dislocations of the ankle are much more common than supposed and are serious injuries.

2. Because they are misdiagnosed as "sprained" ankles, they are usually inadequately treated.

3. Immobilization in plaster should be used in recent dislocations; chronically unstable ankles subject to recurrent "sprains" may require surgical repair.

THE TIMING OF FRACTURE TREATMENT

FRANK S. BABB, M.D.
Saint Paul, Minnesota

THE ABILITY to repair itself and the property of healing is an inherent characteristic of all living tissue. Bone is no exception. If protected from further injury, a broken bone will always repair itself. Certain extrinsic as well as intrinsic factors, however, influence this healing process and fracture treatment should be designed to utilize these factors to advantage. The timing of such treatment is important, and it is with this phase of fracture treatment that we are here concerned.

TABLE I.

Time since injury	Microscopic picture	Chemical picture	Clinical picture
1st week	Hematoma	pH—acid Histamine Vasodilatation	Fragments freely moveable
2nd week	Granulation tissue	pH—acid Phosphatase increased	Fragments less moveable
3rd week	Early callus	pH—alkaline Deposition of calcium	Fragments becoming "sticky"
10-12th week	Immature bone		Fragments clinically united
1st year	Mature bone		Fragments reshaped and recannulated

In order to better understand the timing of fracture treatment let us first of all review the gross and microscopic processes that go on following such injury. For the first few days the hematoma between the bone ends begins to organize. The blood mixed with traumatic exudate is partly fluid and partly clotted. It is soon invaded by the rapidly-growing cellular granulation tissue. After the first two to three weeks new bone called callus is first laid down in minute amounts around the blood vessels. This primary callus will eventually become bone if immobilization is continuous and uninterrupted. It will require many months, however, for mature bone with normal trabeculae to develop. In order to clinically correlate this process, consider for a moment the accompanying table.

Organization of the hematoma between the bone ends results in a scaffolding or network of fibrous connective tissue. When this is ready a chemical change takes place in the tissues by which calcium, previously in chemical combination in the blood and tissue fluids, is now released and deposited in this pre-bone matrix. Clinically we know this stage of the process has been reached when the bone ends are felt to be "sticky" and can no longer be moved freely on the other. Radiologically we begin to see evidence of callus around the fracture site. If immobilization is incomplete there may be abundant external callus due to diffusion of the hematoma. This does not necessarily insure firm bony union, however.

During subsequent weeks primary callus becomes bone by virtue of a physico-chemical process of substitution. By ten or twelve weeks weight-bearing bones under ideal circumstances are sometimes solid enough so that external splinting can be safely discontinued. An x-ray reveals a rather homogeneous mass of new bone at the fracture site and we say the fracture is united. Not for a year, however, will the healing process be completed. A new medullary cavity must be developed. Extra bone at the fracture site must be removed. The bony trabeculae must thicken and strengthen in response to normal stress and strain, until finally the fracture site becomes indistinguishable from normal bone. The healing process is then complete.

Do all fractures adhere strictly to this timetable? Obviously they do not! Many factors

---

Read at the Centennial Meeting of the Minnesota State Medical Association, Saint Paul, Minnesota, May 18, 1953.

TABLE II. FACTORS INFLUENCING RATE OF HEALING

1.	Age	
2.	Type of fracture	Transverse vs. oblique Compound vs. closed
3.	Blood supply	Hyperemia vs. ischemia
4.	Distraction	
5.	Interposition	

enter into the rate of repair and the healing process in two identical fractures can vary tremendously. Those factors influencing fracture healing may be summarized as in Table II.

It is a common observation that the healing process in a growing child is much more rapid than in an adult. In an infant a fractured femur exhibits callus in a few days and is solid in one month; by age five years it requires at least two months; and in an adult four to six months. An oblique fracture with a wide expanse of raw bone to raw bone heals faster than a completely transverse fracture. Compound fractures are slower to unite than closed fractures. Fractures in the lower third of the tibia have a poor blood supply and as a result of ischemia are slow to heal. Hyperemia on the other hand, when it persists, will also delay union. Hence infected fractures are always slow to unite. Distraction of the fractured fragments from too much traction delays union. All of these factors so far, however, will only *delay* union—they do not prevent it. If immobilization is continued and uninterrupted, union will occur. Interposition of soft tissue, however, can render bony union impossible. A continuous hematoma no longer exists and non-union can be predicted.

Delayed union, therefore, implies a fracture that will still unite if immobilized long enough. Non-union, however, should be reserved for those fractures wherein all cellular activity has ceased. Except for interposition of soft tissue the only cause of non-union in a fracture is failure to immobilize the fracture long enough. Fractures cannot be treated by the calendar. Just because a certain fracture is not solidly united by a certain date, is no justification to abandon treatment. If a continuous hematoma exists between the bone ends all fractures will unite if completely and uninterruptedly immobilized long enough. Therefore, we must recognize delayed union due to one or more of the above factors and be prepared to continue treatment until the fracture is united. Only in this way can we keep ununited fractures in the category of delayed unions and out of the realm of non-unions, where only bone grafting can ever hope to complete the healing process.

What are the criteria for a diagnosis of non-union? When the bone ends become rounded, sclerosed and the fracture line is quite apparent on x-ray despite prolonged passage of time—non-union is established. Further immobilization will avail us nothing. Some other form of treatment is now necessary.

Before attempting to decide when to stop treatment, however, let us consider for a moment when to start treatment. As a rule this is no problem. Treatment is usually started within the first twenty-four hours. The fracture is immobilized and healing is underway. However, some fractures require more than one manipulation, and others require delayed open reduction. There is no doubt but that the sooner continuous, uninterrupted immobilization is started, the sooner bony union is complete. However, during the first week one probably does not interrupt the healing process sufficiently to jeopardize the final result. If during the second week the fracture hematoma is disturbed, the delicate new granulation tissues are destroyed and the ultimate healing process is delayed. After the third week, if surgical interference must be resorted to, some type of bone grafting procedure should be considered, to insure early union. Needless to say, compound fractures require immediate attention; so do fracture dislocations, for not infrequently the integrity of the overlying skin if not the blood supply to the limb itself may be in jeopardy. Fractures of the femoral neck perhaps do not require the same urgent attention, but where the blood supply to the femoral head has already been embarrassed I feel the earlier the fracture is reduced and immobilized the better will be the result. In addition, patients in an older age group who fall and break a hip are seldom in better physical condition for surgery than the day of the accident.

To decide when to stop treatment is a more difficult decision. The diagnosis of a healed fracture involves a correlation of some several observations, as does any other diagnosis. One must consider the clinical and the radiological evidence as well as the length of time since the fracture was first immobilized. The diagnosis of a healed fracture is based on (a) clinical findings, (b) x-ray findings, and (c) calendar findings.

After considering those factors influencing the rate of healing, one can turn to the calendar and then arrive at a rough estimate of the "due date." In fracture treatment this is the date before which one would *not anticipate* union to be complete. On this date the cast or other external fixation can be removed. The fracture site is examined clinically. It is tested for motion. It is tested for any undue pain or tenderness. The presence of pitting edema at the fracture site alone, should be a warning signal that union is not yet sound. If, however, the clinical prerequisites for union are satisfied one then turns to the x-ray. Views must be taken in at least two planes at right angles. In addition to re-affirming satisfactory position and alignment, the radiograph is expected to reveal adequate callus formation. What else one looks for depends on the type of bone under consideration. In the case of a weight-bearing bone, the fracture line will have to be all but obliterated. *There must be continuity of trabeculae* between the proximal and distal fragments. In a non-weight-bearing bone like the clavicle, however, such continuity is not a prerequisite for discontinuing immobilization. In fact if one waited for x-ray confirmation of healing in this fracture, it might require three months. We all know from experience that the average clavicle is sufficiently healed in four to five weeks, however, and non-union is rare.

Fig. 1. Roentgenograms of a tibia in which immobilization was refused by the patient after fifteen months. The first view was taken in April, 1949; the second in October, 1950.

To return to the weight-bearing bones, however, if one discontinues immobilization before the fracture is sufficiently healed, the healing process will go into reverse, callus will be absorbed and non-union will result. The accompanying roentgenograms show a tibia in which immobilization was refused by the patient after fifteen months. Unprotected weight-bearing was resorted to. The patient then returned at eighteen months complaining of increasing pain. Immobilization was resumed after freshening the bone ends. Only after three years was this fracture finally healed. Such is the price for interrupting immobilization.

When one is in doubt as to the status of bony union in a long bone, an x-ray should be taken while springing the fracture first one way and then the other. If any angulation occurs at the fracture site, bony union of course is not yet sound. Further immobilization is necessary.

Union, delayed union, and non-union are, therefore, three diagnoses that must be carefully differentiated in timing the treatment of fractures. There is one other diagnosis that will sometimes have to be made. *Avascular necrosis* affects treatment and prognosis materially. Several bones have a precarious blood supply. Fractures that disrupt this blood supply render part or all the bone avascular. Such bone deprived of all its blood supply undergoes necrosis. If weight-bearing is permitted before a new blood supply has invaded the necrotic bone, flattening, fragmentation and distortion of the involved bone results. Therefore, the astragalus, the carpal navicular, and the femoral head in particular, must be watched, for evidence of avascular necrosis. About six to eight weeks after the fracture the necrotic bone is noted to be comparatively more dense than adjacent bone. This fracture must be protected and immobilized a long time. The astragalus and femoral head may require a year to become revascularized. The carpal navicular has been immobilized eighteen months before union was complete. Failure to do so, however, results in non-union.

In conclusion, therefore, let us not treat fractures by the calendar alone. Rather let us consider all the factors that might influence the rate of healing. Having done so, then determine the earliest date by which union might be expected to occur. Then check the fracture clinically and radiologically before discontinuing immobilization.

ACCIDENTS—CHIEF KILLER OF CHILDREN

A. B. ROSENFIELD, M.D., M.P.H., and WM. ALLEN, M.P.H.,
Minneapolis, Minnesota
and
EMERSON W. STOREY, B.S., M.S.
Saint Paul, Minnesota

CHILDHOOD is an extremely dangerous period of life from the standpoint of accidents. Few Minnesota children die from diseases between the ages of one and fifteen years, but accidents are the leading cause of death in that age group—and, indeed, in every age group from one to thirty-five years of age.

One-third of all the deaths of Minnesota children in 1952 were due to accidents. In that year accidents caused more deaths in youngsters aged one to fifteen years than the combined total caused by poliomyelitis, cancer, pneumonia and influenza, rheumatic fever, infectious meningitis, tuberculosis, measles, and chickenpox (Fig. 1). The year 1952 was the worst poliomyelitis year Minnesota has ever experienced, with a total of 3,926 cases and eighty-nine deaths in children under fifteen. Yet during that same period there were 283 deaths in this same age group from accidents.

For all ages, a total of 1,658 accidental deaths occurred in Minnesota in 1952, a decrease of 8 per cent from the 1951 total of 1,804 deaths. Among the ten leading causes of death, accidents continue to hold fourth place, year after year. Home accidents were responsible for more than one-third of all accidental deaths (591 deaths, 35.6 per cent), a slight decrease of 2.3 per cent over the 1951 total. Of all accidental deaths, 17 per cent occurred in children under the age of fifteen years, an increase of 2 per cent over 1951.

Chief Causes of Childhood Accidents

Two-thirds of the 1952 accident fatalities occurred in boys and one-third in girls. Home accidents claimed the lives of 141 Minnesota children under fifteen years of age, one-half of all accidental deaths during childhood. But home accidents were responsible for only one-third of all accidental deaths for all ages.

Motor vehicle accidents accounted for more than one-fourth (27 per cent) of all childhood accident fatalities (seventy-six deaths). Of these twelve were actually home or farm accidents although tabulated under motor vehicle accidents.

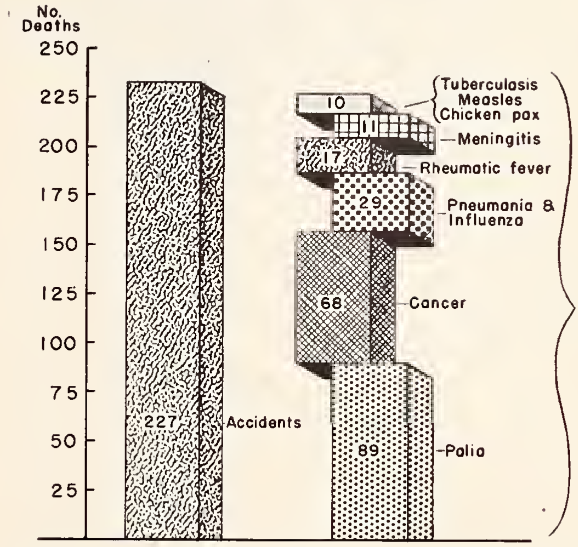


Fig. 1. Leading causes of death among children one to fifteen years—Minnesota 1952.

Motor vehicle fatalities outranked every other cause of fatal injury in each specific age group except infancy. Nine of the children who died in motor vehicle accidents were babies under one year of age, twenty-four between one and five years, twenty-six were five to ten years, and seventeen were between ten and fifteen years.

Extreme watchfulness is necessary to decrease the toll of motor vehicle accidents. The danger of leaving the ignition key in an automobile is illustrated by a fatal farmyard accident which occurred in Nobles County. Because the key had been left in the ignition of a car, which had been parked and left in gear, a twenty-month-old boy was able to start the vehicle. It lurched ahead until it rammed a second car behind which a three-year-old boy was playing. This child was crushed beneath the wheels of the car. As the result of other public accidents sixty children (21 per cent) were killed (Fig. 2).

Dr. Rosenfield is Chief, Section of Maternal and Child Health; Mr. Allen is Health Educator, Section of Public Health Education, and Mr. Storey is Statistician, Section of Vital Statistics, Minnesota Department of Health.

The second leading cause of accidental death under the age of fifteen was drowning, responsible for forty-seven deaths. Burns and conflagrations were responsible for thirty-seven deaths; mechanical suffocation in bed or cradle accounted for twenty-seven; obstruction or suffocation by food or vomitus, by external means, or pressure, resulted in twenty deaths; firearms, thirteen; poisoning, eleven; falls and accidents from machinery, nine deaths each. There were two deaths from electric current (Table I).

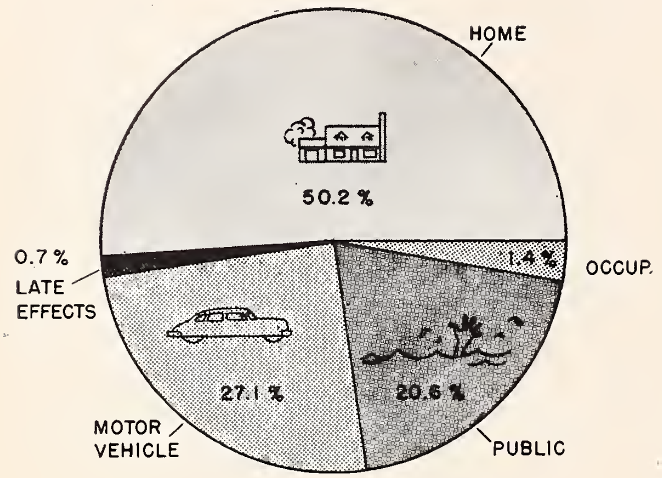


Fig. 2. Accidental deaths by major classification, by percentage during childhood (infancy to fifteen years), and by occurrence in Minnesota, 1952.

TABLE I. PRINCIPAL CAUSES OF ACCIDENTAL DEATHS IN CHILDHOOD (UNDER AGE FIFTEEN) OCCURRING IN MINNESOTA, 1952.

Type of Accident	Total Under Age 15		Under One Yr.	1-4 Years	5-9 Years	10-14 Years
	No.	Per cent	Number	Number	Number	Number
Total	283	100.0	56	105	66	56
Motor Vehicle	76	26.9	9	24	26	17
Drowning	47	16.6	—	23	13	11
Burns	37	13.1	4	20	8	5
Mech. suffocation	27	9.5	26	1	—	—
Obstruction or suffocation by food, external means or pressure	20	7.0	10	6	4	—
Firearms	13	4.6	—	1	6	6
Poisoning	11	3.9	1	8	—	2
Falls	9	3.2	1	6	—	2
Machinery Accidents	9	3.2	—	4	—	5
Elec. Current	2	0.7	—	2	—	—
Other	32	11.3	5	10	9	8

Drowning

Drownings were responsible for one-sixth of all accidental deaths in children in 1952. Among these, twenty-three were preschool children between the ages of one and five years; thirteen were in the age group five to nine years; and eleven were in the age group ten to fourteen years.

"He may have been chasing a frog, which he loved to catch," the mother of a three-year-old drowning victim wrote in describing the accident in which her son died. She explained that her child had never gone into the water alone to wade. In attempting to reconstruct the events that led up to his drowning, she guessed that he might have stepped onto a board floating on the farmyard pond while trying to catch a frog or turtle and had slipped into the water. No one was watching him.

A one-year-old boy in Wadena County drowned in a road ditch in front of his home. He was playing near the ditch when the hired girl called him. He turned to look at her and she went back into the house. He apparently lost his balance and fell into the ditch unseen. In suggesting how the accident might have been avoided, the grieving father wrote that a fence around the yard might have averted the tragedy.

Playing alone in the milk cooler shed at her Otter Tail County farm home while the rest of the family worked in the fields, a two-year-old girl tumbled into the milk cooler and drowned. Artificial respiration and then a resuscitator were used for several hours in a vain attempt to revive her. Four other children drowned in stock tanks in Minnesota, indicating the danger of leaving young children unsupervised.

Failure to repair the top of a cistern, to fill it in or otherwise to protect it, resulted in the deaths of a four-year-old Douglas County boy and his three-year-old brother. The children were playing in the yard and climbed on the cistern cover. They fell through the faulty cover and were drowned. In another accident a child drowned in a septic tank which was not properly covered.

Creeks, ponds, pools, and potholes on farms, as well as lakes which border farm property, claimed the lives of eight other children who did not have the protection of fences or play pens. Three children were drowned in boating accidents in the State, stressing the necessity for the use of safe boats, the wearing of life-jackets, the avoidance of standing or moving about in boats, and the danger of overloading boats. Twenty-four children drowned while wading or swimming in unsupervised lakes and rivers in the state during 1952. All children should learn to swim and should wait for at least an hour after eating before swimming. Swimming and diving should be done only in supervised areas.

Winter, too, takes its toll. Four youngsters fell through thin ice and drowned. The need for teaching children safety rules and supervising their play is emphasized by these accidents (Fig. 3).

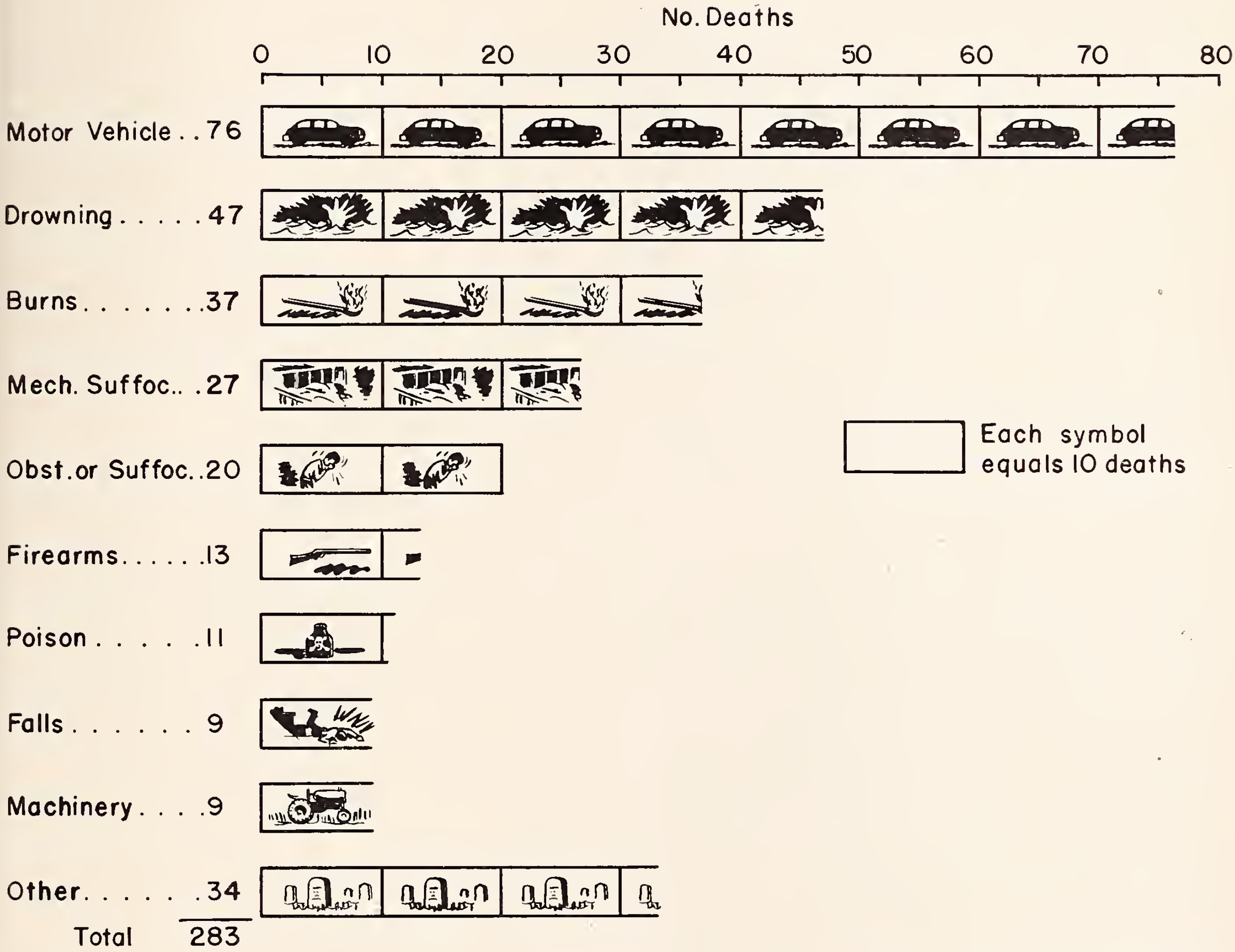


Fig. 3. Major causes of fatal accidents in childhood (infancy to fifteen years) by occurrence in Minnesota, 1952.

Burns

Burns caused by hot liquids, fires and conflagrations took the lives of twenty-four children in the age group up to four years; eight in the age group five to nine, and five in the age group ten to fourteen.

As the result of faulty heating equipment, fifteen children lost their lives in fires and conflagrations. The igniting of a floor joist by a hot steam pipe not properly protected in a Minneapolis apartment resulted in the year's worst fire tragedy. Sixteen persons lost their lives in this blaze, nine of them children under fifteen. In commenting on this accident the chief of the Minneapolis Fire Prevention Bureau said these deaths could have been prevented by having proper protection around steam pipes and by having a qualified, licensed person operating the boiler.

In a home fire in Pine County, two sisters, one four years and the other ten months, were burned to death, when an overheated stovepipe set fire to the wall. The home had no chimney, the pipe from a stove in the basement passing through the floor and then through a wall, without proper insulation. The girls' father was badly burned in a futile rescue attempt.

Playing with matches or lighted candles resulted in the deaths of five children. "Her dress was all aflame, it happened so quickly," one mother wrote about the death of her six-year-old daughter who had found a book of matches and had ignited her clothing while playing with the matches in the kitchen. This accident points up the necessity of keeping matches and cigarette lighters out of the reach of children.

Another mother was awakened by the smell of smoke while taking an afternoon nap. She rushed into the adjoining bedroom where her two-year-old son was in his crib. The child's clothing was aflame, but the mother managed to get him out of the crib, although she was badly burned in doing so. Despite the mother's heroic efforts, the child died from smoke inhalation and second degree burns. How did the fire start? Matches had been left within the child's reach.

In Becker County, one little three-year-old was out of his parents' sight less than ten minutes, but in that time he found some matches, went behind the garage and was fatally burned.

A lighted candle caused the death of a five-year-old girl in Isanti County. While playing in the attic of her home, the child's dress caught fire from a candle which her brother had lighted. She died twelve hours later from second degree burns and shock.

In Fillmore County, a fourteen-year-old youth was fatally burned in an explosion caused by kerosene he was using to start a fire in an old stove. According to a Rochester official, the accident could have been prevented if the lad had not used a flammable liquid to start a fire.

Three children in the state died as a result of burns suffered while playing near bonfires or trash fires in spite of repeated warnings of the danger. In a northern Minnesota town, a mother was burning grass in the yard while her three children played nearby. When the mother went to the backyard, her four-year-old son started to play with the fire which had almost burned itself out. His shirt caught fire and two days later he died from his injuries.

Handles of pots and pans on the stove should be turned inward. Failure to observe this and other precautions and otherwise to protect children from hot liquids resulted in the death of four children under fifteen years of age. In one case a fatal accident was caused when a one-year-old boy pulled a cup of boiling coffee from the table and the contents spattered on his face and arms. In summarizing the accident, the bereaved mother wrote, "I had just poured a cup of coffee. My son was standing by the table. I turned my back. He grabbed the cup."

The use of a steaming inhalant to treat a child's cold led to a fatal accident on a Minnesota farm. The six-months-old infant had been placed next to the stove which held a kettle of boiling water containing an inhalant. A blanket had been spread over the child and the kettle. The mother left the room for a few seconds. When she returned she found that the infant had jerked the blanket, overturning the kettle, and had been scalded on the face, chest, and arms by the boiling liquid. In commenting on how the accident might have been avoided, the father wrote, "Those few seconds my wife was away cost us the life of our beloved son." The use of safe steam inhalators will prevent such an accident.

Failure to test the bath water by a thermometer or the elbow or wrist before bathing a baby resulted in the death of an infant in Beltrami County. An eight-year-old girl placed her infant sister in scalding water in an attempt to bathe her. The mother was not at home when the accident occurred.

Two children in the state were electrocuted in 1952. A one-year-old boy in Blue Earth County was instantly killed when in playing he touched a live wire left on the ground which was wet at the time. In Hennepin County a three-year-old girl was electrocuted when she touched the base of an electric mangle. To prevent electrocution of youngsters, live wires should be protected, electric cords should be in good repair, safety-type wall receptacles should be used and all electrical appliances should be grounded.

Mechanical Suffocation

Mechanical suffocation in bed or cradle was listed as the cause of death in the accidental deaths of twenty-seven children, all but one of whom were under one year of age. Three-fourths of these deaths occurred in babies less than five months old. The usual story is that the baby was put to bed, apparently perfectly well, and was found dead the next morning. It was frequently stated that the baby was found face down in the mattress or blanket or tangled in the bed clothes. While practically all of these deaths were coroner's cases, in only three instances were autopsies done.

Many so-called cases of suffocation by bed clothes are actually the result of an acute respiratory infection, frequently virus in origin. Coroners have failed to carry out adequate autopsies to determine the actual cause of death. Only occasionally is it possible for an infant to become wedged between the foot of the crib and the edge of the mattress and to die from suffocation. Only infrequently is it likely that a plastic sheet may accidentally be pulled over the baby's face, resulting in suffocation. In one instance in this series a one-year-old infant who was pinned into a sleeping bag tried to get off the bed and suffocated as a result. A soft mattress, a feather tick or a pillow, none of which should be used in a baby's bed, may contribute to the possibility of suffocation of a weak infant. But such deaths will continue to be attributed erroneously to mechanical suffocation as long as physicians and coroners neglect to seek the actual cause of death by an adequate autopsy. Under such circumstances parents, too, should insist that an autopsy be done. Only by this means will it be possible to avoid the "guilt complex" that parents may develop in the belief that carelessness was responsible for the death of their baby; or the other extreme, expressed by a few parents, "It was an act of God."

Other Types of Obstruction or Suffocation

Obstruction or suffocation by food or vomitus, by external means or by pressure, caused the death of twenty children. Six infants choked to death from vomitus or mucus in the trachea; two choked on milk. A one-year-old child in Todd County choked to death on a handful of the hulls of sunflower seed resulting in aspiration pneumonia; another child of the same age in Ramsey County suffocated from a piece of bacon lodging in the trachea. A four-year-old child in Meeker County choked on a piece of meat. In St. Louis County, a five-year-old child died from suffocation as a result of a piece of carrot lodging in his trachea.

In Hennepin County a one-year-old retarded child fell between the bed and wall. Because he was not strong enough to pull himself up, he suffocated. A three-year-old Martin County youngster suffocated while playing on a gasoline truck when the heavy metal cover of one of the tanks fell and held his face down over the gas tank.

An eight-year-old child in McLeod County was locked in a cedar chest while playing with a brother and sister. Before the self-locking door could be opened the child had suffocated.

A highly prized belt caused the death of a nine-year-old boy in Traverse County. He climbed on an upper bunk bed to reach clothing which was hanging above the bed. He apparently grabbed the belt which was loose and buckled and threw it over his head. He then reached for the rest of his clothing. In throwing the belt over his head he had unknowingly hooked the belt over a bedpost as well as around his body. When he jumped from the bunk he slipped through the belt until it caught him by the throat. Since his back was against the poster he was unable to twist around to loosen the belt and strangulation resulted.

A somewhat similar accident in Ramsey County caused the death of a two-year-old girl. Playing during her nap-time in a double-deck bunk, the child strangled when her head caught in a hair ribbon looped over a poster of the bunk. In Anoka County a five-year-old tumbled while climbing a tree. He strangled when his head became wedged in a crotch of the tree.

While playing in her McLeod County home, a one-year-old girl tied a venetian blind cord about her neck. She then lay down. The cord tightened as she lay down, and she strangled.

One of the most unusual deaths occurred in Hennepin County when a three-year-old boy was playing in a snow bank with two dogs. Each of the dogs grabbed the ends of the scarf the child was wearing and pulled in opposite directions. Strangulation resulted.

Firearms

Firearms caused the deaths of thirteen Minnesota children under fifteen years of age during 1952. Almost as many children were killed by firearms in and around their homes as were killed in actual hunting accidents.

To cut down the toll of firearms accidents, guns and ammunition should be kept in separate places and under lock and key. Cleaning guns, dropping them or knocking them off a support, exhibiting them or leaving them where children can find them, are the main causes of gun accidents. Before handling a gun the breech should always be opened and the magazine checked. A good safety rule to follow is never to bring a loaded gun into the house. Never point a gun at a person under any circumstances.

"The child took apart a shotgun shell, and tamped the powder into the muzzle. He then discharged the gun, and the breech exploded sending the firing pin into his brain." In this way a St. Louis County official described an accident in which a fourteen-year-old boy was injured in the woods behind his home while playing with a .22 caliber rifle. Death resulted five hours later. "Parental supervision while the child was using the rifle would have prevented the accident," the official thought.

A gun shot wound in the chest caused the death of a seven-year-old boy in Ramsey County. He was shot by his brother while the two boys were playing in the kitchen. In commenting on the incident, the father wrote that the accident could have been prevented if the gun had not been left where the boys could get it.

The happiness and excitement of preparing for a birthday party were cut short by a tragedy in a Jackson County home. In getting ready for his sister's birthday party, a ten-year-old boy was killed when a 16-gauge shotgun was accidentally discharged. The victim and his older brother were playing in the bathroom hall when the fatal shooting occurred.

In Sibley County a twelve-year-old was killed when the accidental discharge of a shotgun struck him in the chest. He was playing with other boys in the yard of his home when the accident took place. How could the accident have been prevented? "By teaching a boy how to handle firearms and their dangers," the father of the victim replied.

Poisoning

Accidentally taking poison caused eleven deaths among Minnesota children under fifteen years of age during 1952.

In Rice County, a one-year-old girl used a chair to climb to the medicine shelf. She reached a bottle of pills and swallowed a handful of them. The pills were digitalis and fatal poisoning resulted. The father wrote that the accident could have been prevented by more careful storage of medicine. A three-year-old boy died under similar circumstances in Ramsey County.

Storing medicine in a locked medicine cabinet and keeping all poisons in another locked cabinet will prevent such tragedies. All poisons should be correctly labeled. Cleaning compounds used in the kitchen or bathroom, such as lye, drano, ammonia, and silver polish should never be stored under the sink or on an easily accessible shelf, but should be kept in a locked cabinet.

Poisoning from swallowing and inhaling gasoline caused the death of a one-year-old girl in Koochiching County. She found a bottle of gasoline in the yard while playing with other children and drank the contents. Again, proper storage would have prevented the accident.

Only eleven hours elapsed between the time a three-year-old boy in Renville County drank antifreeze which he found in the garage and the time he died of ethylene glycol poisoning.

A one-year-old boy in Hennepin County died of poisoning after swallowing several aspirin tablets. For every fatal aspirin poisoning there are many non-fatal ones in which emergency action is necessary to save the lives of the victims. Aspirin poisoning ranks high as the cause of poisoning accidents among young children. A two-year summary of the experience in the emergency room of one Minneapolis hospital showed that in this period, there were 168 poisoning cases in children under the age of five years, and that sixty-five of these cases were aspirin poisonings (Fig. 4).

These accidents often occur in less time than it takes to tell about them. Recently, in Hennepin County, the mother of three small children was attending to the youngest who was ill. She had left a bottle of sugar-coated aspirin on the table and in the few seconds that she left the room to carry the baby to his bed, the other two children had each gobbled a handful of the aspirin tablets.

Fortunately, her husband was home at the time, and after phoning the family doctor, he rushed the children to the hospital. They were given emergency treatment and were well in a few days, but as the mother said afterwards, "It was much too close for comfort!"

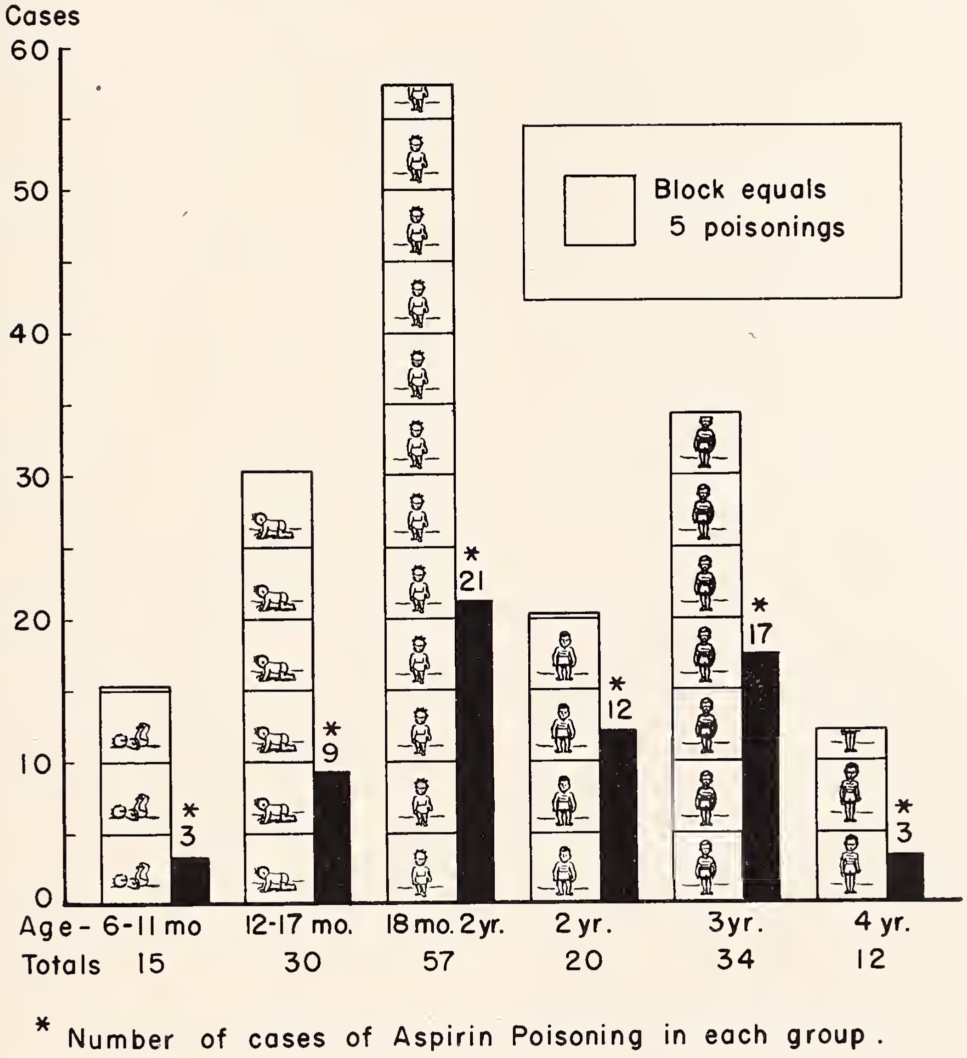


Fig. 4. Poison cases under age five, treated in the emergency room of Northwestern Hospital, Minneapolis, 1951-1952.

Before giving or taking medicine, the container label should always be read twice. A list of antidotes should be posted near the medicine cabinet. In case of poisoning give the proper antidote and call a physician at once.

The death of a one-month-old baby in McLeod County as a result of nitrate poisoning from well water deserves special comment. Since 1947, when the first case was reported in Minnesota, 175 cases including eighteen deaths from methemoglobinemia due to excessive amounts of nitrates in well water have been reported. Most of these cases occurred in southwestern Minnesota. This condition occurs only in infants less than six months of age and is usually quickly cured when diagnosed promptly. It requires a prompt change to low-nitrate water such as water from a municipal supply or distilled water. Farm well water, especially in southwestern and midwestern Minnesota, should not be used for infant feeding unless it is known to be low in nitrate content. The Minnesota Department of Health will analyze such water samples for nitrate content, free of charge.

Attention should be called to the danger of leaving children in parked cars with the motor running. In Itasca County, a thirteen-year-old boy and his eleven-year-old sister died of carbon monoxide poisoning, when they were left in the car while the parents went shopping for several hours.

Falls

Falls rank high as a cause of accidental death among the elderly but they also occur among the very young. During 1952, nine Minnesota children under fifteen years of age were killed in falls.

"If the fence had been left around the septic tank excavation, the accident would not have occurred," explained the father of a four-year-old Hennepin County girl who was killed in a fall in the front yard of her home. The child had been playing alone in the front yard. Venturing too close to the excavation, she had tumbled in.

Failure to put up the guard rail on an upper bunk resulted in the death of a six-months-old boy in Otter Tail County. The child, who had been put to bed in the upper bunk, rolled over the side and plunged to the floor.

In Washington County, a brother and sister played together in the hallway of their home. During their play, the little girl bumped against the door to the basement which was shut but unlocked. The door opened, and the two-year-old child fell down the entire flight of stairs, striking her head on the basement floor. It appeared that except for slight nausea she had suffered no effects from the fall, but she died from the injury twenty hours later.

Only minutes after coming home for lunch, a Ramsey County father learned that his two-year-old daughter had been seriously injured in a fall while waiting to greet him. The little girl had gotten permission from her mother to wait outside for the father. When the father came into the house and said he had not seen his daughter the worried mother ran out of the house to look for her. The child lay sprawled on the concrete below a roof porch where children living in the building played. Because a gate which separated the porch and the flight of stairs had been locked, the child had tried to climb over the gate and had tumbled over the railing of the landing at the head of the stairs. She died three hours later.

A fall from a chair caused the death of a one-year-old boy in Lac qui Parle County. The father, who was putting on storm windows, heard a thump. He hurried into the house and found his son lying on the floor. In falling, the child had struck the back of his head. Death resulted from this injury.

The attempt of a one-year-old girl in Hennepin County to climb a flight of stairs led to her death. After climbing some of the steps, the child lost her balance and toppled backwards. According to the mother, the accident could have been prevented by having a gate at the bottom of the stairs and by inspecting the steps for defects.

Farm Accidents

Childhood accidents occurred in urban areas in 45 per cent of the deaths (126); in rural areas in 55 per cent. Since only 45 per cent of the population live in rural areas it is apparent that more accidents occur there than in urban areas. Of all rural fatalities (157), 25 per cent (thirty-eight deaths) were farm and 75 per cent (119) were non-farm. Four boys (ages eleven, twelve, fourteen and fourteen) were killed while working with farm machinery. Three were killed by tractors and one by a manure lift. Included in the thirty-four farm home accidental deaths were thirteen drownings, eight burns and five due to machinery. A two-year-old girl was killed when she fell off a tractor while riding on it. Three boys (ages two, two and seven) were killed by tractors backing up on them. A ten-year-old boy was killed by the power belt of a saw rig. The chief dangers from fatal accidents on the farm are machinery (there were seven tractor fatalities), drowning in stock tanks, cisterns, ponds or creeks, and burns. It should be noted, that seven deaths tabulated under motor vehicle accidents actually occurred on farms.

Summary

Accidents continue to be the leading cause of death in children between the ages of one and fifteen years in Minnesota. They were responsible for one-third of all childhood deaths in 1952. Accidents caused more deaths than the combined total of all childhood deaths due to poliomyelitis, cancer, pneumonia and influenza, rheumatic fever, meningitis, tuberculosis, measles and chickenpox.

The leading causes of accidental deaths during childhood were motor vehicles, drowning, burns, suffocation and obstruction, firearms, poisoning, falls, and machinery. One-half of these were

(Continued on Page 1151)

RUPTURE OF THE INTERVENTRICULAR SEPTUM SECONDARY TO MYOCARDIAL INFARCTION

JOHN F. BRIGGS, M.D.
Saint Paul, Minnesota

RUPTURE of the interventricular septum following myocardial infarction is much less common than is rupture of the ventricular wall itself. Perforations usually are single in number, but they may be multiple and most often occur in the lower central part of the septum. The size of the perforation, of course, varies with the degree of infarction. It has been assumed that one can easily diagnose rupture of the interventricular septum secondary to a myocardial infarction because of the appearance of a loud, harsh, blowing systolic murmur often accompanied by a thrill over the precordium. In addition, the patient almost invariably goes into acute heart failure, although patients may survive and live for a number of years. Death usually occurs in most of the individuals shortly after the perforation. Another complication of myocardial infarction is a rupture of the papillary muscle. When this occurs, the same physical findings as those of rupture of the interventricular septum are present, but a blowing to and fro murmur may be present, and the patient usually develops signs of collapse and dies within a short time. Occasionally, patients have survived both these complications. Since it has been stated that a diagnosis of a ruptured interventricular septum is easily made during life, the following cases are recorded for our experience with these complications.

Case Reports

Case 1.—Mrs. B. E. S., a white woman of seventy-two, was admitted to Ancker Hospital on November 8, 1946. Just prior to admission to the hospital, she had had an attack of severe substernal pain which radiated down both arms. It had persisted for a few hours and then had disappeared.

On examination the patient was found to be acutely ill. Her blood pressure was 180/110; pulse 70 and irregular. The heart was found to be enlarged to the left and there was a soft systolic murmur at the apex. The electrocardiogram was diagnostic of an acute anterior infarction.

On the second hospital day, the patient had a friction rub over the precordium and on the fifth hospital day, she became very restless, complained of severe precordial distress, and developed dyspnea and cyanosis. The blood pressure was 87/60. On this day, a very loud, harsh, systolic murmur was heard over the precordium. The patient died on the sixth hospital day of intractable heart failure. It was believed that she had had a rupture of the interventricular septum.

Autopsy examination revealed the presence of a massive myocardial infarction with a rupture of the interventricular septum near its lower portion on the postero-anterior surface. A large thrombus was also present over the wall of the left ventricle and there was a rupture of the right ventricular wall adjacent to the septum and this rupture measured 2.5 cm. in length. The pericardial cavity was filled with 150 cc. of unclotted blood. This patient had the obvious story and physical findings which indicated the diagnosis of a ruptured interventricular septum.

Case 2.—The patient was admitted to Ancker Hospital on June 2, 1948, because of pain in his chest which had awakened him at 2 a.m. on the morning of admission. The pain was burning in nature, deep in the chest and varied in intensity. It had been so severe that he broke out into a cold sweat. The pain radiated across the chest into the upper regions of both arms. There was no nausea or vomiting.

Examination revealed the patient to be comfortable and on physical examination his blood pressure was 158/94, temperature 99.2 and pulse 104. The physical findings showed the heart to be enlarged to the left. No murmurs were heard. The electrocardiogram was diagnostic of a posterior myocardial infarction.

At the end of the first day in the hospital, a friction rub was heard over the precordium. On the third hospital day, the patient was free of pain and the heart rate was slow and regular. He did complain of some pain in the back. He developed dyspnea and was placed in an oxygen tent. The physical findings remained unchanged. The patient again was having pain in his back. The resident stated that should the pain continue, he would get a portable chest x-ray to determine the nature of the pain. When seen at 7 p.m., the patient was dead.

Autopsy examination of the heart revealed an infarction involving the posterior portion of the interventricular septum and the posterior portion of the right ventricular wall. There was an area of perforation in the region of the apex and right ventricular wall posteriorly, as well as a perforation of the interventricular septum posteriorly to the area of the infarction.

Case 3.—A sixty-year-old white widower was admitted to Ancker Hospital on October 11, 1946, in an unconscious condition. The informant stated that ten days previously, the patient had had three very severe anginal attacks during one evening, each seizure being relieved by nitroglycerin. The week before admission to the

---

Dr. Briggs is Clinical Associate Professor of Medicine at the University of Minnesota.

hospital, he had been able to work every day and carried on his usual activities. On the day he was admitted to the hospital, he was in his office apparently well, when he made a sudden outcry and a neighbor rushing into the office found him on the floor unconscious. About one-half hour later, he was admitted to the hospital.

On admission to the hospital he was acutely ill, in shock, and covered with a cold sweat. On occasions, he would throw his arms about as though he were struggling. Examination of the chest revealed the heart rate to be rapid and irregular. The tones were distant and no murmurs could be heard. The blood pressure was 60 systolic. An emergency electrocardiogram revealed a right axis deviation with rapid auricular fibrillation.

The patient's condition remained poor during the entire stay in the hospital. He died on October 12, 1946, some sixteen hours after admission. A few hours before death, râles appeared in both of the lung fields and the patient was obviously developing congestive heart failure.

At the necropsy, the heart weighed 436 grams. The valves were normal in appearance and there was a marked degree of coronary sclerosis. The left main branch and circumflex branch of the coronary arteries were practically occluded, but no thrombus was present. The myocardium was pale in appearance and normal in consistency with an area of old fibrosis in the wall of the left ventricle high on the posterior septum. There was also an area of recent infarction involving the mid-portion of the wall of the left ventricle which extended out to the apex. On the wall of the left ventricle there was a rupture of one of the papillary muscles so that it was free in the pericardial cavity. This rupture appeared to be ante-mortem and the rupture occurred at the site of the infarction at the base of insertion of the papillary muscle.

Case 4.—Mrs. A. K., a sixty-year-old white married woman was admitted to the hospital on March 17, 1947. At the time of admission to the hospital, she was unconscious.

A history was obtained from the husband who stated that the patient had been well most of her life except for mild diabetes. On March 15, 1947, two days before admission to the hospital, she had developed pain in her chest which radiated into both her arms. She had also felt very weak. Following the onset of the pain, she became nauseated and vomited, but the following day, she was able to be up and around although she was very tired.

On the day of admission to the hospital, the pain in the chest had returned with increasing severity and she had become markedly dyspneic. At the time of admission to the hospital, the blood pressure was not obtainable. The heart tones were faint and no murmurs could be heard. The electrocardiogram taken on admission revealed a recent posterior infarction. Nine hours after admission the patient died as a result of progressive heart failure.

On autopsy examination of the heart, a purulent material was found in the pericardial sac. The heart weighed 350 grams. The coronary arteries showed sclerosis but no definite interference in the size of the lumen. The main branch of the right coronary artery was sclerotic and had a fresh thrombus which occluded the artery. The interventricular septum had an infarct in the posterior border with a rupture through the septum near the base. The perforation measured 0.5 cm. in diameter.

Case 5.—Mrs. M., a white married woman, aged sixty-five, was admitted to Ancker Hospital on April 19, 1951, and died on May 13, 1951. The patient was first seen at the Ancker Hospital because of a contact dermatitis which occurred in April of 1938. She was not seen again until the present admission at which time she complained of substernal pain which radiated down the right arm. In addition, she had noticed exertional dyspnea. She had known that she had had an elevated blood pressure for many years, and on admission to the hospital it was found to be 200/140. The pulse was 115 and respirations were 18 per minute. An electrocardiogram taken on the day of admission was suggestive of an anterior myocardial infarction. On April 29, 1951, it was felt that she was in mild congestive heart failure. On May 11, 1951, the patient appeared worse, she became cyanotic and confused, and râles were present in both lung bases. She was treated with digitoxin in an attempt to correct the heart failure. On the following day, the pulse was 80, but râles were still present in the chest and on May 13, the patient suddenly became very cyantoic. The blood pressure was unobtainable, and a murmur appeared, systolic in time and loud and harsh; *suddenly it disappeared.* This led to a suspicion that a septal perforation had occurred. The patient's course worsened and she died at 4:45 p.m. on May 13, 1951. The heart at necropsy weighed 450 grams. The pericardial sac was normal. The examination of the coronary arteries revealed them to be sclerotic in all their major branches and what appeared to be an old thrombus was found in the anterior descending branch. The right coronary artery, the circumflex and the left coronary arteries revealed no occlusion. The examination of the myocardium revealed it to be thin, and there was an oval-shaped perforation measuring 1.5 cm. in size between the right and left ventricles, and occurred at the tip of the septum.

Case 6.—J. O., an eighty-two-year-old woman, entered Ancker Hospital on December 3, 1942, and died on December 4, 1942. Five days previous to admission the patient had had a very severe attack of epigastric pain which remained localized to the epigastrium. This was immediately followed by nausea and vomiting; the vomiting persisted until the day of admission. The pain was intermittent in character. The day after the onset of the pain, she had a bowel movememt, but following that time she passed no further gas or fecal material. The patient had had three similar attacks during the last few years. On physical examination, the patient was emaciated, she vomited fecal smelling material, and she was dehydrated. Râles were present in the lung bases, and the heart was enlarged to the left. A loud blowing systolic murmur was heard at the apex of the heart. The blood pressure was 160/90 and the abdomen was distended.

The only electrocardiogram the patient had was on the previous admission to the hospital on October 9, 1939, and this was normal. The patient's condition rapidly became worse. She developed cyanosis with increased dyspnea and she died three hours after admission to the hospital. The most important findings were the presence of a loud, harsh, blowing systolic apical murmur.

At autopsy the heart weighed 440 grams. The valves were normal in appearance but the coronary arteries showed a marked degree of sclerosis. The main branch of the right coronary artery was decreased in calibre. The circumflex branch of the left coronary artery was moderately sclerotic and its lumen was normal in calibre. There was a considerable amount of epicardial hemorrhage in and around the anterior portion of the septum. The myocardium revealed softening with perforation in the region of the septum in the neighborhood of the left ventricle.

Summary and Conclusion

In summary, six cases of myocardial infarction are reported in which a rupture of a papillary muscle occurred without physical findings in one case; the history and typical findings of a perforated interventricular septum occurred in another case; and in the remaining four cases, a rupture of the interventricular septum occurred in the absence of characteristic findings, although the diagnosis should have been established in *Case 5* and suspected in *Case 6*.

In conclusion, when the characteristic signs and symptoms of a perforation of the interventricular septum occur in a patient with a myocardial infarction, the clinical diagnosis is easily made. The same holds true for a rupture of a papillary muscle complicating a myocardial infarction. On the other hand, it is possible for such complications to exist in the absence of the usual physical findings so that the condition then goes unrecognized and can only be diagnosed at necropsy.

ACCIDENTS—CHIEF KILLER OF CHILDREN

(Continued from Page 1148)

home accidents—home, supposedly the safest place in the world. More than one-half of the accidents occurred in rural areas, and one-fourth of these occurred on farms.

It is important to teach children to be thoughtful and alert and to exercise judgment. Parents can help by keeping a sharp lookout, by enabling children to satisfy their curiosity safely, and by helping them to gain experience under proper supervision and guidance. Talking about accidents that happen elsewhere is not very effective. The usual human reaction is—"It can't happen to me." School and home safety programs including a reporting system, are badly needed. There should be an epidemiological study of all accidents to determine the cause, preventability, and means of avoiding a recurrence.

But any accident prevention program requires the active co-operation of parents. The success of such a program will depend on how much effort parents make to reduce the hazards of the home and to keep constant watch over their youngsters. Most accidents can be prevented by using plain common sense. It is absolutely necessary that parents, and children, too, become safety conscious, particularly in relation to drowning and burns, the chief causes of home accidents. Each one of us must do our part to cut down the appalling toll of accidents to children in the home and on the farm, as well as the highway.

CLEIDO-CRANIAL DYSOSTOSIS

E. C. PAULSON, M.D., and NORMAN STERRIE, M.D.

Worthington, Minnesota

THE RARE condition known as cleido-cranial dysostosis is in reality a multiple dysostosis. Cooper[3] has enumerated one hundred abnormalities associated with the syndrome. However, the name is still useful since the clavicular and cranial defects are the most prominent features and serve well to identify the syndrome.

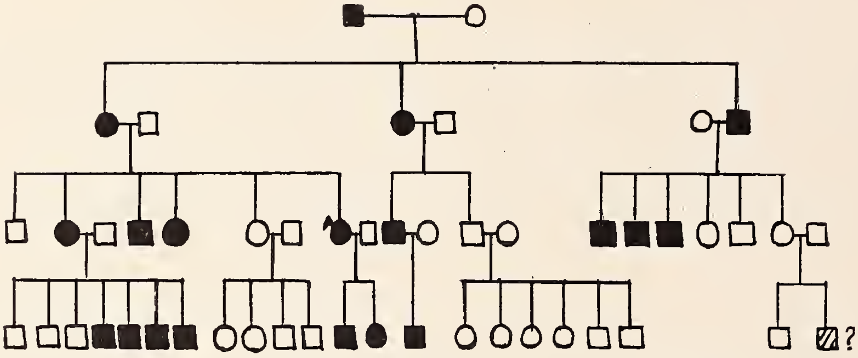


Chart 1. Family history of Mrs. M. L., who is indicated by letter "A." Squares represent males and circles females. Shaded individuals are those with, at least, absent clavicles.

In brief, the classic description involves aplasia of one or both clavicles, exaggerated transverse diameter of the cranium, delayed ossification of fontanels, and hereditary transmission. Anderson[1] says that the trait is dominant, and, consequently, affected individuals would be expected to pass the gene and trait on to 50 per cent of their children. The family tree in Chart 1 bears this out.

Among the common associated skeletal defects are delayed dentition, deficient pelvis and spina bifida. Brailsford[2] points out that the "most striking radiographic feature of the condition apart from the defective ossification of the clavicle is the apearance at all ages of delayed ossification."

Clinically, those afflicted are marked by wide foreheads with prominent frontal bosses, sloping shoulders, weakness of the shoulders, and the unusual talent of being able to approximate the shoulders anteriorly. In the case of women, the associated pelvic defects may result in such small pelves that natural childbirth is impossible and cesarean section must be employed. This is one of the practical aspects of recognition of the syndrome.

Case History.—Mrs. M. L., aged twenty-two, presented herself for care during her second pregnancy in 1948. She had several months previously delivered elsewhere a male infant by cesarean section. Physical examination showed an absence of clavicles, a palpable defect at the site of the anterior fontanel, and frontal bosses. Because of an intertuberosity outlet measurement of 5 cm., section was again indicated. After an uneventful pregnancy, section was done and a seven and one-half-pound female child delivered. Examination of the child revealed an absence of both clavicles and widely separated anterior and posterior fontanels. Further questioning of the mother indicated that the sibling also had absence of both clavicles. This child, B. L., presented for physical examination at the age of four and was noted to have, in addition to the absent clavicles, an open anterior fontanel and prominent frontal bossing.

A family history of four generations as provided by Mrs. L. is portrayed in Chart 1 and serves to indicate the hereditary and familial nature of this anomaly.

Roentgenograms of Mrs. M. L. and her older child, B. L., comprise Figures 1-6. Similar studies were also made of the other child, which were practically duplicates of those of B. L.

From the Worthington Clinic, Worthington, Minnesota.

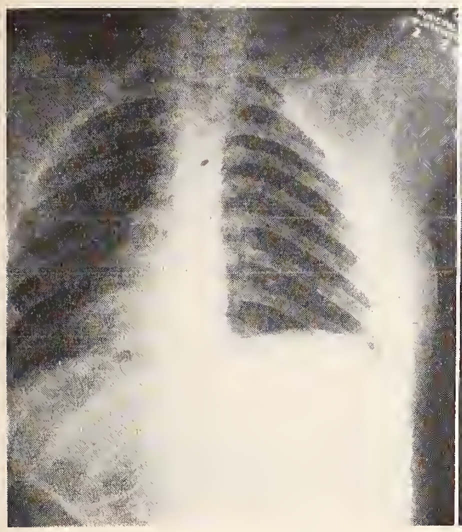


Fig. 1. Mrs. M. L., aged twenty-six; chest film showing absence of clavicles.

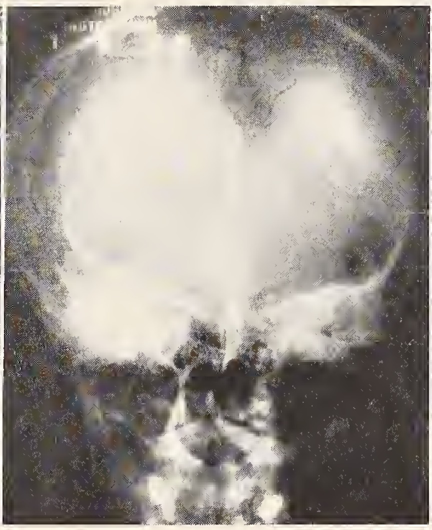


Fig. 2. Mrs. M. L., skull; note breadth of frontal region and open fontanels.

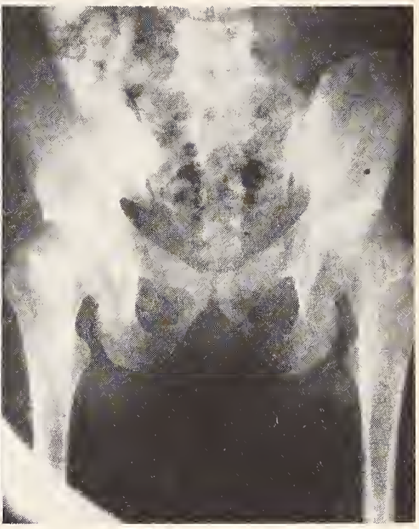


Fig. 3. Mrs. M. L., pelvis; note faulty development of pubes, small pelvic capacity and short femoral necks with valgus deformities.

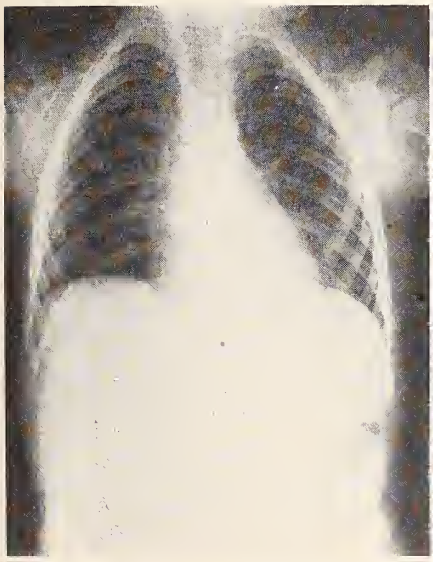


Fig. 4. B. L., aged 4, male; chest film showing absent clavicles and spina bifida of cervical and upper thoracic regions.

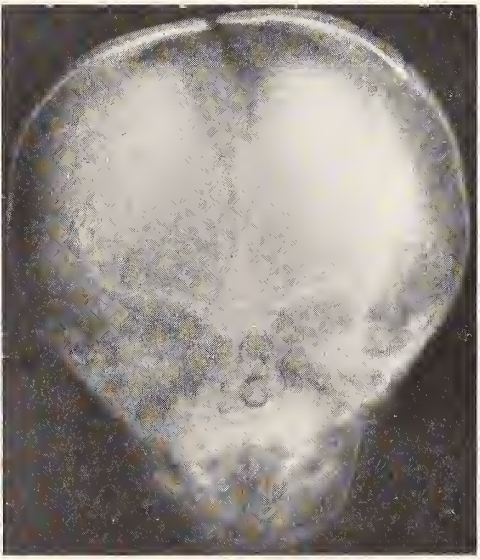


Fig. 5. B. L., skull; note unusual width of calvarium and delayed ossification of entire mid-sagittal portion.

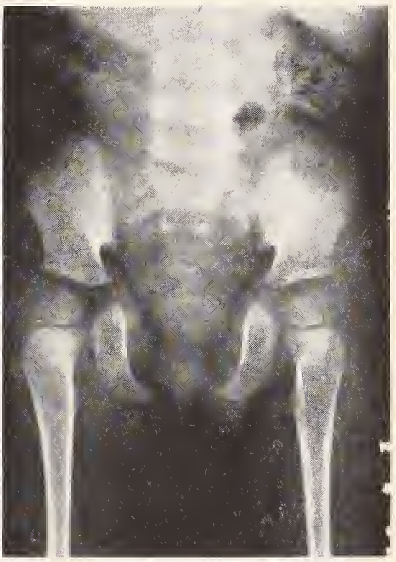


Fig. 6. B. L., pelvis; note absence of pubic ossification. The femoral necks show valgus deformities.

Summary

Cases of a mother and her two children, all with cleido-cranial dysostosis, are described with roentgenograms to illustrate the osseous defects. A family tree, extending back four generations illustrates the dominant hereditary nature of the characteristic.

Bibliography

1. Anderson, R. C.: The Dight Institute for Human Genetics, University of Minnesota. Personal Communication, July, 1953.
2. Brailsford, J. F.: Radiology of Bones and Joints. p. 578. Baltimore: Williams and Wilkins Co., 1948.
3. Cooper, M.: Ann. Dist. Columbia, 10:334, 1941, quoted by R. B. Scott and L. O. Banks, Cleidocranial dysostosis syndrome, Am. J. Dis. child., 81: 394-402 (Mar.) 1951.

HEREDITARY HEMORRHAGIC TELANGIECTASIS

THEODORE KONIG, M.D. and JOHN F. BRIGGS, M.D.
Saint Paul, Minnesota

HEREDITARY hemorrhagic telangiectasis is an inherited anomaly affecting either sex but slightly more prevalent in females. The anomaly is transmitted as a simple dominant by both sexes. It is a vascular disturbance characterized anatomically by multiple dilatations of capillaries and venules which are found in the mucous membranes and in the skin. It is characterized clinically by a tendency to bleed from the angiomatous lesions and the pathologically dilated capillaries.

The condition is sometimes overlooked because the general practitioner is not familiar with it as an entity. Bohington[1] in 1865 described hereditary epistaxis. Rendu[2] in 1896 recorded a case of telangiectasis and recognized the pathology and hereditary aspect of the disease. Sir William Osler did a great deal to establish telangiectasis as a clinical entity. The literature on hereditary hemorrhagic telangiectasis was summarized by Goldstein in 1931, by Houser, by Stock, and by Barrock in 1944.

Diagnostic criteria for hereditary hemorrhagic telangiectasis were established by Goldstein, Larrabee, and Litman. These are three in number:

1. Definite hereditary tendency.
2. Visible typical telangiectasis.
3. A tendency to bleed from these lesions.

Since the disease is transmitted by a dominant gene, it should make itself present in every generation. On several occasions, families have been reported in which the disease has been traced through six generations. Often one generation is skipped only to have the disease appear insidiously in the next generation. Some of these people do not suffer from hemorrhage and this may be the reason for the apparent skipping of individuals of an entire generation. The hereditary factor is constant and where it cannot be demonstrated this failure is due to atavism. Very careful examination usually reveals signs of the disease in one of the parents. Many authorities believe that the condition is more common than the number of families reported in the literature. Many cases are without doubt undiagnosed or not recorded.

The patients described in the literature have been chiefly of Anglo-German, Latin, Scandinavian, or Jewish stock. It has been stated that the disease appears to be more severe in people with dark skins.

Pathology

The walls of the involved vessels have been found to be extremely thin. The dilated walls of the affected vessels are composed of but one layer of endothelium and are covered by an extremely thin layer of epidermis or mucosa. There is no elastic area so once hemorrhage commences, there is little power of the walls to contract; however, this is not characteristic of all the lesions for there may be dilatation of capillaries and venules with no deficiency of elastic tissue. On the skin the lesions are more commonly found on the cheeks, nasal orifices, lips, ears, neck, scalp, fingers, and trunk. The mucosa of the nasopharynx is seeming most often affected, followed in frequency by the tongue, palate, inner cheek, pharynx or larynx. Telangiectasis has been described in almost every organ system in the body including gastrointestinal tract, genito-urinary system, respiratory system, brain, meninges, and liver. Lesions in stomach, colon, bladder, and brain are extremely rare. It is believed that large pulmonary arteriovenous aneurysms discovered clinically in some cases may be only the larger counterparts of widespread telangiectasis in the pulmonary vessel.

Signs and Symptoms

The symptoms are determined by the fragility of the lesions and the time of their appearance. Epistaxis occurs with increasing frequency from childhood onward. Bleeding is variable. Sometimes there is profuse hemorrhage which in some reported cases has caused death. The mortality in some families who have the disease is 4 per cent. Usually there is only a moderate bleeding tendency which may cause secondary anemia and

---

From the Medical Service of St. Joseph's Hospital, Saint Paul, Minnesota.

Dr. Briggs is Clinical Associate Professor of Medicine, University of Minnesota.

considerable incapacity from nasal or oral hemorrhage. In middle life, the skin and visceral lesions appear and often add to the blood loss. Trauma is not necessary for bleeding occurs spontaneously without trauma. Some patients may have nasal hemorrhage five or six times daily for weeks at a time. Epistaxis is conceded to be the most common complaint but bleeding may also come from telangiectatic areas in the mouth, gastrointestinal tract, genitourinary, or respiratory tract. Hemorrhage into the brain and retina has been attributed to telangiectasis but the lesions have not been demonstrated in all instances.

The lesions are small red purplish spots usually pin point in size, though sometimes they are larger and even in certain rare instances have a spider-like configuration. These lesions may or may not disappear on pressure. Pallor may or may not be present.

Fitzhugh has reported splenic and hepatic enlargement. This may be due to expanding hemangiomata. Characteristic lesions have been reported seen by both gastroscopic and proctoscopic examination.

Blood loss with resulting anemia are the usual blood findings. Bleeding time, circulation time, clot retraction, platelet count, and cuff test are usually considered essential for diagnosis. Singer and Wolfson reported a family with telangiectasia and a positive tourniquet test. There seems to be some relation and overlapping between pseudohemophilia (Von Wellebrand), hereditary familial purpura simplex and hereditary hemorrhagic telangiectasis. Pseudohemophilia is characterized by prolonged bleeding time, normal clotting time and clot retraction, a normal platelet count, and a variable tourniquet test. Hereditary familial purpura simplex presents a positive tourniquet test but a normal bleeding time. In addition to the pure types of hereditary capillary bleeding syndromes described above, patients are seen with some features of more than one condition.

I. Hereditary Familial Vascular Purpura
  (a) capillary fragility
  (b) cuff test
II. Hereditary Hemorrhagic Telangiectasis
  (a) visible telangiectasis
III. Pseudohemophilia
  (a) bleeding time positive
  (b) deficient contractibility response

One should be cautious in diagnosing the disease in childhood. Usually bleeding is not noticed until the age of twelve to fourteen and if one examines younger children of parents who have the disease, they may or may not show telangiectatic areas. Children in families with a history of telangiectasis usually have no spots on their faces until the age of twelve to sixteen years when the spots gradually appear and later start bleeding. Some authors have stated that the maximum development of these lesions tends to occur in the fourth decade. In typical cases it is well to emphasize that blood studies are normal in hereditary hemorrhagic telangiectasis unless there is secondary anemia from blood loss. Errors in diagnosis may occur, if the vascular anomalies are overlooked. These lesions should be looked for in patients with obscure anemias. One should look for lesions on the skin in unexplained bleeding from the gastrointestinal, genitourinary or respiratory tract. With internal hemorrhage in the presence of visible skin or mucous membrane lesions, every effort must be made to rule out other causes of internal bleeding.

Treatment

The treatment, which has changed but little since Osler's description of the condition, is aimed at management of the chronic bleeding and treatment of blood loss anemia. Transfusion is required for acute hemorrhage and iron is indicated for chronic blood loss. A number of agents have been recommended for destroying the telangiectatic areas. They include thermocautery, application of silver nitrate, chromic acid, trichloracetic acid, and radium. Recurrence frequently appears as rapidly as the old areas are destroyed. Electrocoagulation when judiciously used gives the most satisfactory results. Some authors have reported that rutin is of some value.

One cannot leave the subject of hereditary hemorrhagic telangiectasis without making some mention of pulmonary arteriovenous aneurysms.

In case reports of arteriovenous aneurysms there have been occasional references in the literature to its association with telangiectasia of the skin. The first case of pulmonary hemangioma was found by DeLange, DeVries, and Robbles on the postmortem examination of a two and one-half-year-old child. Reading earlier described the clinical triad of clubbing, cyanosis, and polycythemia associated with this pulmonary lesion. Of fifteen cases of pulmonary lesions reported in the literature, only three had associated hereditary hemorrhagic telangiectasis though nine had telangiectasis of nose, face, or lips of a nonhereditary or non-hemorrhagic nature. Symptoms of this disorder occur in the third decade and these are caused by chronic anoxemia. The suggestive symptoms are dyspnea, weakness, palpitation, dizziness, numbness, syncope, diplopia, thick speech, hemoptysis, and chest pain. The arterial blood shows low oxygen saturation. A striking negative finding is the absence of signs of cardiac disease which is in marked contrast to the effect upon the heart of arteriovenous aneurysms in the greater circulation. The polycythemia which occurs differs from that in primary polycythemia by the absence of immature white cells. The murmur is characterized by being late systolic diastolic in time and best heard on inspiration. By doing angiography and using intravenous diodrast, the lesion can be clearly demonstrated.

Congenital pulmonary arteriovenous fistulae are not always single lesions; on the other hand, evidence now seems to accumulate that they are more frequently multiple and may occur in both lungs.

Radiologically there are slight lobulated shadows of increased density observed in the lung. Intrapulmonary opacities are connected with hilar vessels by broad tortuous bands of increased density representing distended branches of the pulmonary artery and dilated branches of the pulmonary vein.

The tumor may show variations in size depending on change of the intrathoracic pressure. On Valsalva test (deep inspiration followed by forced expiration against the closed glottis) the mass may become smaller. Mueller's test (deep expiration followed by forced inspiration against a closed glottis) causes an increase in the mass. The steadily increasing number of cases reported suggests that the condition is more common than has been supposed. Awareness of the picture may lead to a more frequent diagnosis of the condition.

Case Report

Case 1.—Mrs. A. H. W., a white, divorced, woman aged fifty-five whose occupation was housework was seen on April 4, 1952, with the story that she had been tired most of her life but particularly so in the last ten to twelve years. She had been suffering from recurring hemorrhages from the nose and in addition was anemic. She had known for many years that she was suffering from some type of disturbance of her blood vessels that easily produced hemorrhage, and the hemorrhage usually occurred from the nose. Sometimes the hemorrhages were so severe as to require heroic measures. She had also stated that because of these hemorrhages she was anemic.

Her family history revealed the fact that the patient had relatives who bleed easily including her daughter and a grandson.

On physical examination, her blood pressure was 142/90, pulse, 72, and temperature, 99, at 2 p. m. on April 4, 1952. The only findings of note were marked areas of telangiectasia of the mucous membranes of the nose, mouth, lips, and also of the skin. The remainder of the examination was normal. Laboratory investigation on this date revealed the hemoglobin to be 10 grams, the red blood cell count 2,910,000, the white blood count 6,400 with normal differential. The urine was normal. The blood sugar 104 mg. per cent, the blood urea 30 mg. per cent, and the sedimentation rate 50 mm./1 hr. The platelet count 850,000 per 100 white blood cells.

The electrocardiogram was normal. The chest x-ray showed enlargement of the left ventricle. The Mantoux test was negative. The Wassermann test was also negative.

The patient was admitted to St. Joseph's Hospital on April 15, 1952, for further study and at this time the stools were found to be positive for occult blood. The bleeding time was 8 minutes, 25 seconds, the clotting time 4 minutes, 30 seconds, and the platelet count now 325,000. Urobilinogen was normal.

An x-ray examination of the gastrointestinal tract at this time was essentially negative except for a defect in the large bowel which was present in the distal portion of the sigmoid. This did not have the appearance of a malignancy and, on proctoscopic examination, it was found to represent an area of telangiectasia.

The bone marrow studies were normal.

The diagnosis was familial hemorrhagic telangiectasis.

The patient's daughter and the grandson reported for physical examination and in both individuals areas of telangiectasia were found on the skin and in the mucous membranes. There was no evidence of an arteriovenous fistula in the lungs.

Conclusions

An instance of familial hemorrhagic telangiectasis is reported in which the patient knew of members of her family who suffered from this disease and in whom the characteristic lesions were found in her daughter and in her grandson. Attention is called to the fact that this is not an uncommon disease and that patients who suffer particularly from epistaxis and other types of bleeding should be investigated thoroughly to determine whether or not they suffer from this particular affliction.

(Continued on Page 1197)

Laboratory Aids to Medical Practice

Sponsored by
The Minnesota Society of Clinical Pathologists

LABORATORY DIAGNOSIS OF TUBERCULOSIS

GERALD M. NEEDHAM, Ph.D.
Section of Bacteriology, Mayo Clinic, Rochester, Minnesota

RECENT advances in the management of tuberculosis have increased the importance of proving the diagnosis before a program of treatment is planned. Although the results of physical examination may suggest tuberculosis as the diagnosis, many other conditions can produce similar findings; therefore, the clinician needs the assistance of the laboratory to establish the diagnosis. Demonstration of *Mycobacterium tuberculosis* is the only procedure that is absolute in the diagnosis of tuberculosis; therefore the laboratory aid must be of the highest quality.

The clinician must be ever mindful of the possibility of mixed infections and that the underlying cause of many infectious processes may be caused by the tubercle bacillus, despite the isolation of other organisms. It becomes the clinician's responsibility to supply the laboratory with the best possible specimen and with any helpful information that he might be able to pass along. This may pose some serious problems but there can be no compromise with adequate specimens and repeated examinations.

The bacteriologist employs three primary procedures that may aid in the diagnosis of tuberculosis: (1) smears stained for acid-fast bacilli, (2) cultures and (3) inoculation of guinea pigs. It is presumed that positive results obtained from inoculation of guinea pigs constitute indirectly a diagnosis of tuberculosis. On the other hand, the report that a smear contains acid-fast bacilli means only that organisms have been observed that are of size, shape and staining characteristics compatible with those of tubercle bacilli. It tells nothing of the cultural features and virulence of the organism. Clinical material frequently contains nonvirulent acid-fast bacilli; the latter are so common in gastric juice that the results of stains of such material are meaningless.

There are many methods for acid-fast staining, with claims for one advantage or another, but the earliest method, the Ziehl-Neelsen technique, still yields the best results. Techniques involving the use of fluorescent dyes yield good results in the hands of some investigators but further evaluation is required before they can be recommended as routine diagnostic methods. As already mentioned, acid-fast bacilli exist that are nonvirulent for guinea pigs. Positive results of an acid-fast stain, therefore, are not by themselves satisfactory evidence of tuberculosis. Likewise, negative results of examination of smears do not rule out tuberculosis. During the year 1952 at the Mayo Clinic, 34 per cent of the cultures that disclosed *Mycobacterium tuberculosis* were obtained from material in which examination of smears made at the time the cultures were begun failed to demonstrate acid-fast bacilli. The acid-fast stain is valuable in the presumptive diagnosis of tuberculosis but it needs to be supplemented by culture and inoculation of animals before a final diagnosis can be made.

On the contrary, cultures have considerable significance in the hands of experienced persons. Study has shown close correlation between cultural features and virulence. It is impossible to obtain reliable cultural results unless a dependable medium is available. The ideal medium should support growth of small numbers of bacilli, promote rapid growth and be capable of inhibiting the growth of contaminating organisms. Only properly prepared and fresh mediums will yield satisfactory results. Liquid medium is not recommended for diagnosis but serves best as a research tool, since it can be injected directly into animals. One of the greatest drawbacks in use of cultures is lack of volume of material. A number of specimens must be received in the laboratory daily to warrant establishment of the necessary special procedures required to culture the tubercle bacillus. A consistent flow of clinical material helps insure suitable reagents, fresh mediums and a technologist who is thoroughly experienced.

Although many laboratories rely entirely on the results of cultures, it has been the experience at the clinic that acid-fast bacilli found in cultures always should be checked for virulence in guinea pigs. Studies for virulence are carried out at the clinic on all newly isolated strains.

At times tubercle bacilli are so few that inoculation of animals is indicated in addition to microscopic study and culture. At the clinic, two guinea pigs are inoculated directly with the material obtained from each patient or from each organ being studied. One animal is inoculated subcutaneously over the lower portion of the abdomen and the other is inoculated intraperitoneally; each animal receives half of the total inoculum. At the end of four weeks, the animal which received the material intraperitoneally is given 0.5 cc. of old tuberculin (OT) subcutaneously. About 75 per cent of the animals which have tuberculosis as the result of the inoculation are so sensitized by this time that they will die within twenty-four to forty-eight hours after injection of this amount of OT. If the animal does not die as the result of this injection, both animals are allowed to live for an additional four weeks and are then killed. All animals are examined at necropsy for evidence of tuberculosis. Evidence obtained from study of about 2,500 animals each year indicates considerable variation in the extent and location of the disease process in these animals. A positive finding constitutes the demonstration of gross lesions that contain acid-fast bacilli. Occasionally, lesions grossly resembling tuberculosis are encountered but are proved to be those of brucellosis or coccidioidomycosis.

No matter what technique is used in the search for tubercle bacilli, one salient feature should be kept in mind, namely the more extensive the investigation the greater the likelihood of finding the organisms. Since the number of bacteria may be small and the virulence may be low, an inadequate specimen may mean the difference between positive and negative results of laboratory examination. Therefore, it is extremely important that the bacteriologic laboratory have as large a specimen as possible.

Summary

The finding of acid-fast bacilli in a smear is only suggestive of the diagnosis of tuberculosis. Similarly, a smear that does not contain demonstrable acid-fast bacilli is of little value in ruling out this disease. Cultural techniques for isolating and identifying acid-fast bacilli are satisfactory screening procedures when performed by skilled workers. All newly isolated strains of acid-fast bacilli should be tested for virulence in animals. The inoculation of guinea pigs is the most satisfactory single procedure for the detection of *Mycobacterium tuberculosis* in the wide variety of specimens submitted to the diagnostic laboratory.

* * *

This is the tenth in a series of editorial reports sponsored by the Minnesota Society of Clinical Pathologists and designed to foster closer relationships between the practicing physician and the pathologist.

Although the incidence of tuberculosis has decreased greatly during the past few years, this disease still remains a major cause of economic loss and of death, particularly among young adults. With the advent of increasingly effective chemotherapeutic agents for the management of tuberculosis, the diagnosis of the disease in its early stages becomes of great importance. As pointed out by Dr. Needham, the final positive diagnosis of tuberculosis rests with laboratory identification of the tubercle bacillus. This fact again emphasizes the vital part played by the laboratory and the pathologist in the modern practice of medicine.

The editorial committee of the Minnesota Society of Clinical Pathologists solicits suggestions and comments concerning this series of reports. Reprints of this presentation can be obtained from the author or the chairman of the committee.

George G. Stilwell, M.D.
Chairman, Editorial Committee

Mayo Clinic
Rochester, Minn.

GRANTS FOR SURGICAL FELLOWSHIPS

The Woman's Auxiliary of the United States and Canadian sections of the International College of Surgeons has set aside $6,500 to be used for grants for surgical fellowships, according to an announcement made by Mrs. Walter C. Burket of Evanston, Illinois, national president of the Auxiliary.

The funds as voted by the Auxiliary's board of directors will be distributed as follows:

$3,000 to finance study abroad by an American or Canadian surgeon.

$3,000 to finance study in the United States or Canada by a foreign surgeon.

$500 for a senior medical student at the University of British Columbia, in Vancouver, B. C.

Details of the grants will be announced later.

MEDICAL HISTORY OF THE COUNTY OF YELLOW MEDICINE

MILDRED B. LEE
Granite Falls, Minnesota

(Continued from October issue)

John Theodore Billington was born in Norway, of English descent. After completing his elementary education he entered the University of Christiania, from which he secured degrees in both pharmacy and medicine. He then migrated to the United States, and in order to acquaint himself with the customs and language, took a postgraduate course at Rush Medical College. He graduated in 1860.

After graduation he entered into partnership with a Chicago man and went into the drug business, at the same time starting to build up a medical practice. He also made a trip back to Norway, thinking that he should settle there, but soon came back to the United States. He was married in Chicago to a young woman of Norwegian descent.

While Dr. Billington was practicing in Chicago that city was visited by what was called "the black death" (cholera?). People died in their homes, in the streets, wherever they happened to be, sometimes after only a few hours of sickness. The demands upon the doctors for their services were so great that they could get no rest; Dr. Billington escaped occasionally by hiding in an outhouse to snatch a few hours sleep.

Dr. Billington next moved to Stoughton, Wisconsin, and practiced there for a time. During this period his wife and daughter died.

From Stoughton, Dr. Billington moved to Decorah, Iowa, where he gave much time to the examination of soldiers enlisting in the Civil War, and also for the purpose of determining eligibity for pensions. He became counsel for the Chicago and Saint Paul Railroad. He also married again, his second wife being a resident of Decorah.

In 1879, Dr. Billington came to Canby, then a settlement of less than 200 people. He practiced medicine there and also operated a drug business. In his practice he covered a wide territory, on horseback, or sleigh, or horse and buggy, according to the weather. Often he would have to stay at the homes of settlers on his trips around the country because of the great distances to be covered.

Stories are told of his experiences, and one of these is of the time he stopped at a settler's home and was told that he probably would not get any supper because the wife and mother had been bedridden for sometime. Without telling the family that he was a doctor, Dr. Billington asked permission to see the woman, which was granted. He then asked the farmer to take the family out in the yard and stay there until he called them. Doubtfully, they obeyed. In a few minutes Dr. Billington joined them; and a very short time later the family was startled to see the wife standing in the doorway, calling them to help her put out the fire. Dr. Billington had simply set fire to her mattress. She was completely cured.

This instance of application of shock for the cure of a purely mental illness shows that from the earliest times doctors were aware of the relation between mental and physical disorders. In this case the woman had not been out of bed since the birth of her last child. Such stories are told in many places of many doctors, and it may be assumed that Dr. Billington was not the first, nor the last, to use such methods.

When Dr. Billington arrived in Canby he had a family. Alec Billington, one of his older sons, well remembers Canby as it appeared in the winter of 1879, and the events of the early years. He remembered "Texas Jack" and his gang, desperadoes in flight from the authorities, who were "perfect gentlemen" as long as they stayed in Canby. He remembers the time "Black Jack" was run out of town by the outraged citizens; and the noisy saloons that ran all night in spite of a midnight closing order. Alec Billington became a druggist and was associated with his father in the drug business in Toronto.

Dr. Billington was licensed in Minnesota on December 15, 1883. At that time he was practicing in Toronto, but the *Canby News* reported him as being in Canby quite often, and planning to come back to Canby to practice. He is quoted as saying, "Canby is the healthiest place I've ever been in." His daughter Dora became the wife of Samuel J. Lewison of Canby, well-known pioneer resident and businessman; his daughter Ella Billington has taught in the Canby schools and elsewhere for more than fifty years; and Alec Billington, retired, also lives there. Another daughter, Mrs. Georgia Blackmoor, lives at Vancouver, British Columbia, and there are two other sons, Ferdinand and Otto, who live in Seattle.

Dr. Billington died in Decorah, Iowa, in 1893, at the age of seventy-five years.

Dr. W. D. Calvin came to Canby in 1895. He was married, and Mrs. Calvin was also a doctor.

The Calvins were cultured people and made many friends in the short time they resided in Canby. Dr. Calvin soon had the reputation of being a very good doctor, and prospects for building up a good practice were promising. He made friends easily and was very well liked. The general impression was that he was exceptionally skilled, a thorough gentleman, and was a credit to his profession.

Mrs. Calvin practiced a little; but in that time women doctors were rare, and received little support from the public. Mrs. Calvin was dissatisfied at her own lack of opportunity in a place where her husband seemed marked for success. It is believed that her attitude was responsible for their leaving Canby in 1896.

There appear to be no further records of the Calvins in Minnesota and these few facts constitute all that is known of them.

Carlos Lord Chambers was born at Freeport, Illinois, April 12, 1858, and in 1867, came with his parents to Mantorville, Minnesota. After completing his elementary education in the schools of that community he entered Carleton College at Northfield, graduating in 1881. He then entered Rush Medical College at Chicago, and graduated with a degree in medicine in 1883. Shortly thereafter he located at Canby, Minnesota.

Dr. Chambers was a pleasant, friendly, personable young man, and soon established himself in practice. In the first year of his residence in Canby he married a girl from Kasson. The young couple took an active part in the social life of the town, Dr. Chambers having a good singing voice and considerable ability in music, and Mrs. Chambers occasionally appearing on literary programs as a reader or in "declamations." Both young people kept in close touch with their families, and the comings and goings of the parents of each are faithfully noted in the newspapers of the time. Dr. Chambers' father was a traveling salesman for a furniture company, and regularly stopped at Canby on his rounds, making many friends in the community; and Mrs. Chambers' mother who resided at Mantorville was also a frequent visitor.

Dr. Chambers' first office was at his residence "next door to Al Williams' Wagon Shop." Next he moved to a building "over Wattner's old stand," then into the Gilberson Drug Store. This was one of the older drug stores, and the doctor and Adolph Gilberson were both fond of chess. One owned a chess board, and the other a set of chessmen. These articles changed hands one Christmas when Gilberson presented his chess board to the doctor and found himself in receipt of the doctor's chessmen.

Dr. Chambers served as county physician for the western townships of the county. He also headed many communities in furtherance of civic projects. He was in demand whenever music was needed and seems to have played an instrument on some occasions.

Dr. Chambers enjoyed a good practice and was respected for his ability. He was one of the stockholders of the Bank of Canby and was active in civic affairs.

In 1891, Dr. Chambers went into the drug business, opening a new and modern drug store in the Rund and Bing Building. He had an office at the drug store. He was not a pharmacist; and after about nine months he sold out to the man who had been acting as his pharmacist, and announced that he would accept a position at "Bellview Hospital, New York."

The Chambers family had made many friends in Canby, who "will surely regret to see them go," according to the *Canby News*. Dr. Chambers' interest in Canby, outside his profession, had been music, hunting, chess, and spirited horses. He had a smart turnout for his country calls, as frequently noted in the papers. Mrs. Chambers was also well liked, although she is remembered best for her curiously Victorian attitude toward women who required her husband's care during childbirth. "Oh, those dirty women," she would say, "Why can't they look after themselves?" The Chambers had no children.

Dr. Chambers did not go to New York as planned. He remained at Mantorville, at his wife's former home, for some time, then visited other towns and finally settled in Kasson. He practiced there until his death.

Dr. Chambers died after an operation performed for injuries sustained when he was thrown from his buggy while returning from a professional call. His death occurred December 5, 1904, in Minneapolis, Minnesota.

Franklin Judson Cressy was born in Greenfield, Franklin County, Massachusetts, July 5, 1849, the son of Francis and Lovina Cressy. Francis Cressy was a native of Bennington, Vermont, and Lovina Churchill Cressy was born in Franklin County, Massachusetts. Besides Franklin J. Cressy there were three other children, Frances L., William B., and Ernest F. Cressy.

In 1858, the Cressy family moved to Olmsted County, Minnesota, where they established their residence on a farm. When the first graded school opened in Rochester in 1868, Franklin, then eighteen years of age, attended it for two years. He then read medicine in the office of Dr. H. Galloway of Rochester. Following this he took a course of lectures at Ann Arbor, Michigan, and then entered the College of Physicians and Surgeons at Keokuk, Iowa. He was graduated in 1877.

After graduation Dr. Cressy began the practice of medicine in Howard Lake, Minnesota, and in 1879, married in that village Miss Fannie M. Taylor of Madison, Wisconsin. In the same year her sister Mary had married Florado H. Wellcome, who was a student at Rush Medical College at Chicago, and after his graduation they went to Granite Falls to practice. It is probably for this reason that Dr. Cressy and his wife also went to Granite Falls in 1880.

Being a graduate pharmacist as well as a physician, Dr. Cressy at the first opportunity bought the stock of the Gould Drug Store. This stock was destroyed by fire in the building the night after the sale; but Dr. Cressy nevertheless purchased a new stock and opened a new drug store which he operated in connection with his practice for two years. He then sold a half interest to a C. G. Johnson, formerly of Philadelphia, and at the end of another two years sold his remaining interest so as to devote all his time to his practice.

Dr. Cressy's offices were on the second floor of the Neste Building, on Prentice Street, Granite Falls, and had neither adequate heat, running water, or other facilities. His home was at the top of the hill on Eighth Avenue, a large, well-planned house with landscaped grounds. It has since been divided to make two houses, one of which still stands on the original site.

In appearance Dr. Cressy was tall, extremely slender, with dark eyes and dark hair, and rather prominent acquiline nose. He was aristocratic both in looks and bearing, in the memory of people who knew him. His manner was courteous and kind; he was a friendly man, conscientious in his work and always concerned for the welfare of his patients. His reputation and character were exceptionally good in every respect; he was highly regarded both as a doctor and as a person.

Mrs. Cressy was an attractive woman and very much interested in all cultural projects. In pleasant weather she would accompany her husband on his calls about the country, sitting out in the buggy with a book while Dr. Cressy made his calls. They were a congenial, perhaps devoted couple, taking part in the social affairs of the town and interested in all civic affairs. Mrs. Cressy was one of the members of the Hesperian Club, first women's study club in Granite Falls, and was its president for several years.

The Cressys were frugal in their habits. In a time when people ate heartily three times a day, Dr. Cressy's purchase of a "hawf pound" of meat for dinner was noted with amusement. With proverbial Yankee thrift they invested wisely in bank stock and lands, building up a substantial estate.

Dr. Cressy had a good practice, and gave it careful attention. He served as county physician, with Dr. Stratton, and then with Drs. Stratton and Schjeldrup, for a number of years. He also served on the Board of Health of the City of Granite Falls. In 1898, he was appointed county coroner to succeed Dr. Donnell who died during his term of office, and was re-elected twice. He was a member of the Masonic Lodge, of the State Medical Association, Camp Release District, and of the American Medical Association. He received his Minnesota License in 1877. In 1885, he took a postgraduate course in surgery at Rush Medical College.

The Cressys were childless. They continued to live in Granite Falls until Dr. Cressy's last illness, from which he died in Saint Paul on June 26, 1916. At the time of death he was sixty-seven years of age. He was survived by his wife, Fannie, a sister Frances Bulen, and two brothers, William and Ernest Cressy.

Dr. Albert W. Cummings graduated from the Hahnemann Medical College, Chicago, in 1884, and was licensed in the State of Minnesota (No. 928) on May 28, 1884. He began his practice in Sauk Center, where he remained until 1891, when he came to Granite Falls. In the December first issue of the *Granite Falls Tribune* this comment appears: "this gentleman is another of the medical persuasion and has an extensive business giving entire satisfaction to all whom he treats."

Dr. Cummings opened an office in a small building on the south side of Prentice Street what is now 711 Prentice Street. He was of the homeopathic school, and had a good practice. He appears to have been a quiet, rather retiring man, who took no active part in the affairs of the community. He was married and had two children.

Dr. Cummings stayed about seven years in Granite Falls and then returned to Sauk Center.

Dr. Alexander C. Dockstader was a physician of the homeopathic school, a graduate of Hahnemann Medical College and Hospital, Chicago, class of 1880. He first located in South Park, Dakota County; about 1883 he came to Granite Falls, where he had an office "next door to Nare's Drug Store." His professional card stated that he would be in his office from 8 to 9 a.m., and from 1 to 4 p.m.

Dr. Dockstader had been married on September 20, 1882, to Miss Carrie Gardner, of Saint Paul. While in Granite Falls two children were born, Mettie, who died at the age of four years, and Allen Gardner. The family occupied the house known as the Foster house, which stands just off Prentice Street on Ninth Avenue.

During the period of residence in Granite Falls, Dr. Dockstader built up a good practice and was very active in the Methodist Church, the Masonic Lodge, and several musical organizations. Both Dr. and Mrs. Dockstader appeared as soloists on the musical programs of various organizations. The doctor was also a member of the city band. In later years he became an accomplished musician, able to play almost every wind instrument.

Dr. Dockstader was also interested in sports and athletics. He was a member of the Granite Falls Baseball League, and had the distinction of being the first player to pitch a curved ball. He was also an ardent tennis player. He was fond of hunting, and after leaving Granite Falls returned many times to follow this sport in the hunting season. In appearance he was a tall, heavy set man, of jovial disposition. He made many friends wherever he went.

Mrs. Dockstader was also very popular, active in the church and social circles, and much in demand for her musical ability.

County records show the birth of a still-born child in the summer of 1885, and shortly after this the Dockstaders prepared to leave Granite Falls. They sold the home and all its furnishings, and a group of twenty-five friends gathered at a farewell party and presented them with gifts.

From Granite Falls Dr. Dockstader went to Red Wing, where he practiced for a time, probably two years; he was in Minneapolis from 1887 to 1889, in Saint Paul from 1892 to 1896, and again at South Park. He later located in Lake City where he was for many years a very successful physician and surgeon, and served as county physician for Dakota County.

Dr. Dockstader's many interests made him a welcome addition to every community, and he enjoyed life and had many friends. Three other children were born: Irma, Harold J., and Ethel who died in infancy.

In his later years Dr. Dockstader lived in Hastings, Minnesota, in the home of his son Allen. He died there on July 16, 1945, at the age of ninety-one years.

He was survived by his children, Irma, now Mrs. R. W. Cummings of Saint Paul, Allen G. Dockstader of Hastings, and Harold J. Dockstader, president of a bank at Grand Rapids, Minnesota.

(To be continued in the December issue)

President's Letter

ESPECIALLY FOR YOU

If you are a general practitioner, the annual Interim Session of the American Medical Association is planned especially for you.

The meeting, scheduled for December 1 through 5 in St. Louis, holds a wealth of material presented particularly for the general physician. More than 150 papers by outstanding physicians will cover such topics as internal medicine, surgery, pediatrics, obstetrics and gynecology, tuberculosis and other diseases of the chest, cardiovascular diseases, arthritis, dermatology, gastrointestinal diseases and neuropsychiatry.

Of special interest, in view of the traffic fatalities and methods of prevention recently employed, is the exhibit symposium on the prevention of traffic accidents. This will include a discussion of the responsibility of the doctor in telling his patient when not to drive; also what other precautions the physician should take in such special situations as the testing of the drinking driver and the care of the injured after an accident. Representatives from the National Safety Council and several police departments will participate.

The usual exhibit features, obstetric manikin demonstrations, a diabetes exhibit and a question-and-answer conference are also planned, with special attention given to the interest of the general practitioner.

The St. Louis meeting will again present color television, showing motion pictures covering all the important problems which the general practitioner faces. This is a continual showing and many authors will be present to discuss their work.

Scientific and technical exhibits are also slanted toward the specific interests of the general practitioner. About eighty displays appear in the scientific exhibit, while the technical exhibits will number to about 160 booths covering all types of office and medical practice needs.

The importance of this meeting to the general physician cannot be over-emphasized. Those of you who have attended annual meetings of the AMA have seen the extent of the entire session and possibly have felt that more material for the G.P. could be incorporated into the meeting.

The Interim Session fills that need. Every physician should make an effort to attend at least part of this session, for its value is extensive, its scope is broad, and its interest is high.

President, Minnesota State Medical Association

Editorial

ARTHUR H. WELLS, M.D., *Editor;* GEORGE EARL, M.D., HENRY L. ULRICH, M.D., *Associate Editors*

GERIATRICS—MEDICAL OPPORTUNITY

THIS NATION is the most favored nation on the face of the earth today. Its wealth is tremendous. Its people are relatively free, and its lands have not been destroyed by the invading hand. As a nation, we have been profligate of our great natural resources in the past. At present we are extremely profligate of our human resources. The economic usefulness of some 10,000,000 people is discarded at age sixty-five, and the burden of their support is in large measure placed upon those in a younger age group who are economically productive. The individual is taught from early life to think of retirement and pension, rather than to think in terms of continued usefulness as long as he lives. We destroy 40,000 people annually on our highways.

We are in ideological conflict with opponents who have unlimited manpower, whose citizens have great mental capacity, whose people are capable of great scientific achievement, and whose leaders are dedicated to the objective of world domination. If we are to meet our adversaries successfully, we need to conserve our total human resource.

Society, in general, must provide youth with unlimited challenge; it must present youth with great opportunity and the mental, physical and emotional capacity of our young people must be developed to the utmost. In our social structure, citizens with mature minds must be motivated to work to their greatest capacity, and must be allowed to work unhampered by economic restriction, blind prejudice or consuming envy.

The increasing median age of our citizens, the fact that there are approximately 15,000,000 of our people in the over-sixty age group, and the knowledge that the average life expectancy is now approaching seventy years, emphasizes to us the importance of the geriatric problem in our economic and social structure. Necessity suggests that we keep this older age group economically useful. We are short in manpower as compared to our ideological opponents.

The foundations for senescence are laid in the years of youth and maturity. The peak incidence of chronic disease occurs in the two decades between thirty-five to fifty-four years, while the peak incidence of disablement and invalidism is found in the period from fifty-five to seventy-four years of age. The person who develops good mental habits, excellent emotional attitudes and useful physical skills in youth, who keeps the mind alert by continued study, the body strong and supple by proper nutrition and physical activity, and the spirit fed by "faith, hope and charity" during maturity, will often remain useful and alert, and an important member of our society during his waning years. It is important for this individual to know that society appreciates his abilities, and is eager to use them as long as they exist.

The physician is in a key position to aid in the social conservation of those people who have reached maturity, and are mellowing with age. Knowledge, now existent, can be applied more effectively to the fields of nutrition. We are well, but not wisely, fed in this nation. Much remains to be done in guiding our eating habits as a nation. Existing information provides a foundation for better work in prevention and treatment of such diseases as obesity, myxedema, primary and secondary anemia, diabetes and malnutrition, cancer, and tuberculosis. The prevention of accidents and sound public instruction in the matter of alcoholic abuse will yield large human dividends. Much can be done to guide social attitudes in regard to aging, and to motivate the individual to remain useful as long as he lives.

The problem of chronic disease and its resultant invalidism has been spoken of as "medicine's number one problem." Research and practice in this field will enable the physician to make a notable contribution in the conservation and wise utilization of our greatest national resource, its human resource.

References

1. Rusk, Howard A.: Medicine's Number One Problem. New England J. Med., 249:232 (Aug. 6) 1953.
2. Stieglitz, Edward J.: Geriatric Medicine. 2nd edition. P. 19. Philadelphia: W. B. Saunders Co., 1949.

W. S. N.

REACTION TO REACTION

A COMPLIMENT deftly turned never fails to please. Pride in our State Medical Association is given an extra boost by the editorial, Minnesota Centenary, in the September 10 issue of the *New England Journal of Medicine.* We are grateful for that boost and editorial notice.

This circumstance also gives us the chance to write our bit about the *New England Journal.* Ordinarily, we do little more than skim through the editorial pages of the medical periodicals that cross our desk. Not so with the *New England Journal.* Despite the universally recognized high quality of its scientific articles, we *read* the editorials first. Why? Because they have the most scholarly, straightforward and readable discussions of practical medical and medico-social (if a difference exists) problems we find.

We know none of the editorial staff personally, but we are willing to vouch, just from their writing, that they are men of good will. May their sincere reasonableness continue to shine through their editorials.

H. G. M.

TUBERCULOSIS IN MINNESOTA

MINNESOTA holds an enviable position in tuberculosis control. Its mortality rate has been reduced to one of the lowest positions on earth. Its morbidity rate has been greatly decreased and so has its infection attack rate. Nevertheless, on the basis of sample testing of people of all ages, approximately one million of our citizens harbor tubercle bacilli. No one knows how many of them will have the disease evolve to clinical proportions, but the number will be sizable.

The majority of Minnesotans in whom tubercle bacilli reside are in the upper age brackets. They were children when most persons who died from tuberculosis did so in their homes and when tuberculosis was still abundant among the cattle herds. In necrotic and caseous lesions, they are still harboring the descendants of the tubercle bacilli which invaded their bodies while they were children and young adults. It is in these older people where the bulk of morbidity and mortality is now occurring. In fact, of the 205 persons who died in Minnesota in 1952, 83.9 per cent were forty years or older and 40.5 per cent were sixty-five or over.

Among those who have attained the age of twenty or thirty years, tubercle bacilli have invaded the bodies of relatively few; consequently, morbidity and mortality are at low ebbs. Indeed, only ten persons under the age of twenty-five years died from tuberculosis in Minnesota in 1952. Thus, in more than the first third of life's span, only 4.9 per cent of the total number of deaths occurred.

Minnesotans have practically stopped talking about controlling tuberculosis and have substituted the thought of eradicating the disease. This is well within the realm of physical possibility, but it will require a long time and much more arduous and painstaking work than that of the past.

With eradication in mind in the early 1930's, Minnesota physicians began considering adoption of special techniques that would offset the impending sense of false security that was sure to develop as mortality and morbidity rates decreased. In other words, as the glamour disappeared there must be special methods to stimulate and maintain interest and activity until eradication is accomplished. It was recognized that the time would probably come when in some years no deaths would be reported and no one would be ill, yet a serious tuberculosis problem would exist among those who still react to tuberculin by reason of residual, caseous and necrotic lesions containing tubercle bacilli.

Such techniques were discussed on a number of occasions by the Committee on Tuberculosis of the State Medical Association. This group decided to recommend to the Council that the State Association and allied groups draw up plans for accrediting counties on the basis of accomplishment in tuberculosis work. This was only a part of the state-wide tuberculosis program of the Minnesota State Medical Association. The Council approved and the House of Delegates unanimously accepted this plan. The Governor, the State Board of Health and, later, the Minnesota Tuberculosis and Health Association were invited to be active participants in the projects. The following requirements were established, by which counties could be accredited.

1. The average tuberculosis mortality rate for the immediately preceding five years must not exceed ten per 100,000.

2. At least 90 per cent of all the high school

(Continued on Page 1196)

The Dean's Page

UNIVERSITY OF MINNESOTA SCHOOL OF NURSING

Most physicians are painfully familiar with the current nursing "shortage" but not all are aware of the basic causes for this, nor of the intensive efforts and the diverse methods used to increase the over-all supply of nursing personnel.

There are today more nurses practicing their profession than ever before. In spite of this, the demand for nursing services exceeds the supply. Contributing to this condition are the construction or expansion of hundreds of hospitals throughout the country, the recruitment of some 5,000 nurses by the armed forces, the introduction of new and better medical techniques and therapeutic procedures, the decrease in the length of the work week in hospitals in line with practices in other fields, and the delegation to nurses of many procedures that were formerly carried out by physicians.

To meet this situation, effective action along three lines is essential. First, every possible effort must be made to recruit even more qualified young women for nursing services. Intensive recruitment campaigns for both professional and practical nurses are conducted year-round by the nursing profession at the national level in co-operation with the American Medical Association, the American Hospital Association, the National Foundation for Infantile Paralysis, the United Civil Defense Fund and the Advertising Council. On the local level many communities are doing a spectacular job of telling the story of nursing, the needs in the profession, and the satisfactions to be derived from participation in this aspect of the health field. The effectiveness of this recruitment program in Minnesota is evidenced by the fact that in 1951 there were 49 young women per 100,000 population admitted to schools of nursing in Minnesota as compared to 27 for Wisconsin, 32 for Iowa, 22 for Michigan and a national average of 28.

Second, nursing services and duties which can be performed by less skilled personnel should be delegated to them. This requires expert leadership and supervision on the part of nurse administrators. Experience has demonstrated that such supervisory and administrative ability is seldom innate; therefore education for and practice in supervisory and administrative skills are two of the "musts" before smooth and efficient utilization of augmented nursing staffs can be achieved.

And, third, physicians and hospital administrators must find ways to reduce to a minimum the demands for nursing services and to achieve the greatest possible efficiency in the performance of hospital functions. In accepting its responsibility in helping to meet these demands, the University of Minnesota School of Nursing offers preparation of nursing personnel in all major areas. The School prepares professional nurses for the practice of nursing in a sixteen-quarter program and practical nurses in a four-quarter curriculum. In co-operation with the School of Agriculture it offers a six-quarter program in practical nursing and home management. The University of Minnesota is the only center in the state of Minnesota, and in this region, preparing head nurses and other administrative, teaching, and supervisory personnel, as well as preparing graduate nurses through advanced study for more skilled practice in the many areas of clinical nursing such as medical, surgical, pediatrics, obstetrics, psychiatric, operating room, rural, and tuberculosis nursing.

In short, a great part of the answer to the "shortage" of nursing personnel lies in conservation of human resources by improving the skills of all who administer or participate in the care of the patient and by intelligent fitting of the worker to functions within his or her scope of interest and ability. The University of Minnesota through its School of Nursing is attempting to make the greatest possible contribution toward meeting this important community need.

Harold S. Diehl
Dean, Medical School, University of Minnesota

Medical Economics

Edited by the Committee on Medical Economics
of the
Minnesota State Medical Association
George Earl, M.D., Chairman

FEDERAL AID SOUGHT FOR MEDICAL CARE PLANS

New impetus has been put on the proposal to provide federal aid to voluntary prepayment medical and hospital care plans in the country.

The House Interstate Commerce Committee has been asked to give early consideration next year to a health insurance bill to provide federal and state grants for this purpose.

A group of Republican senators and representatives introduced the bill. They are: Senator Ives of New York, Senator Flanders of Vermont, Representative Javits of New York, Representative Hale of Maine, and Representative Scott of Pennsylvania. Ives, Flanders and Javits spearheaded introduction of substantially the same measure in 1949, at which time Vice President Nixon, then a member of the House, also was a co-sponsor.

According to a recent issue of *Insurance Economics Surveys*, the proposed program calls for Federal grants-in-aid to those States which agree to participate. Representative Javits stated that "the people are offered the maximum in health assistance with the minimum of government interference. Primary responsibility for the development of adequate health services is placed in the states and local communities and in non-profit cooperatives and group practice units with the fullest encouragement to the local initiative."

It should be noted here that the bill would provide aid to *all* plans which requested it in a cooperating state. It should be noted also, parenthetically at least, that very few states have refused to be "cooperating states" where federal aid to something or other is in the offing.

An official stand against this bill has been taken by the medical profession. A similar bill was actively opposed when introduced in the 81st Congress, and active opposition by the profession is anticipated if the forthcoming bill is reported out of Committee in the next session of Congress.

Commission's Recommendations

The proposed legislation is consistent with the recommendations made last December by President Truman's Commission on the Health Needs of the Nation. But it is also consistent with recent statements by Health, Education and Welfare Secretary Oveta Culp Hobby that adequate medical care for all could be achieved by "expanding and perfecting the system of voluntary, non-profit, privately operated health-insurance programs."

Local Basis Noted

Representative Javits, in reporting the bill to the committee, pointed out that local people would determine the "yardsticks of medical care" made possible by community medical resources, on which the scope of plans would be based. He explained that the plan is based on a fee of a percentage of income by those who elect to use it, thereby permitting anyone to join a plan, with the grants-in-aid helping to make up the difference between the standard fee and what an individual might be able to afford in premium charges.

Not Compulsory

"No one is compelled to join," he stated, "but non-joiners lose the benefit of limited public support for the health plans." He also asserted that despite the fact that more than half of the nation's population has some sort of insurance coverage against sickness, this protection in many instances is inadequate.

Survey Cited

To make his point stronger, Representative Javits called the committee's attention to a survey by the University of Michigan Survey Research Center, made for the Federal Reserve Board. This study found that unpaid medical bills are owed by nearly one family out of five.

Insurance Economics Surveys quoted these figures:

> "The average debt for each of the 10,200,000 families is $105, or a total of over $1 billion, according to the study. Nearly one-third of the 15 million families in which the family head is less than 45 years of age and the children are under 18 owes medical bills. And of all the money spent privately for medical care in the United States about $1 out of every $9 remains as a debt to a doctor, hospital or pharmacist."

President Quoted

Representative Javits also quoted President Eisenhower's statement on health insurance, to support the proposed legislation. He called for early consideration of the proposed measure and pointed out that the President, in a campaign speech October, 1952, called action to make adequate medical care available to all, "a sound investment." The President also said that the way to accomplish this would be "to build on the system of voluntary, non-profit health insurance plans which our people have already developed at an amazing rate," and added that "the usefulness of Federal loans or other aid to local health plans should be explored."

Summing up his testimony before the committee, Representative Javits felt that hearings should be scheduled early in the next session "so that the Congress may have before it a thorough study on which to base legislation on this most important issue before the American people."

No doubt, the medical profession will exhibit high interest in the progress of this bill next session.

ANNUAL SURVEY SHOWS HEALTH INSURANCE GAIN

Record high levels for voluntary health insurance in America were reported recently for the year 1952. The Health Insurance Council has just released its annual survey of accident and health coverage for the nation. Every section of the country participated in the gains, the Council said.

Minnesota's part of the gain showed up in the following figures: 2,383,000 persons protected against the expense of hospitalization; 1,895,000 persons protected against surgical expense; and 1,171,000 against medical expense. Minnesota's population is about 3 million as of 1950.

Cash Benefits Up

In releasing the report, the Council stated that cash benefits flowing from voluntary health protection aggregated more than $2 billions in 1952. The release said: "About half this amount went to help meet the cost of hospitalization, and over a half billion dollars more went towards operations and doctors' bills. Another half billion dollars represented benefit payments by insurance companies replacing income lost due to accident or sickness." Thus voluntary health protection is now taking care of a substantial part of the nation's health bill, the Council stated.

More Folks Covered

A significant increase in the number of persons covered for various types of health and accident insurance was also noted in the report. The total number of persons covered against hospital expense approached the 92-million mark at the end of last year. This represented an increase of more than 5½ million, or 7 per cent over 1951. Surgical expense coverage was carried in 1952 by more than 73 million persons. This figure jumped 12 per cent over 1951, or 7½ million persons. Approximately 8 million more persons than in 1951 were protected against doctors' bills under medical expense coverage at the end of last year. This increase brought the total number of persons so protected to nearly 36 million and represented an increase of 29 per cent over 1951.

The number of persons protected against loss of income due to disability exceeded 38 million at the end of last year, which is a new high mark.

Also, the year saw increasing public acceptance of major-medical expense coverage, the newest form of voluntary health protection designed to help meet the catastrophic costs of very serious illness. Nearly 700,000 persons had this form of protection at the end of 1952.

The report explained that "broadly speaking, major-medical expense coverage takes up where the customary forms of health protection—hospital, surgical and medical care—leave off." The report noted:

> "The development of major-medical expense coverage is further evidence of the willingness of the insurance business to experiment in the public interest and to take steps to meet a recognized public need. It testifies to

the alertness of the companies writing accident and health protection in recognizing the need for broader coverage than had heretofore been available, and thus reflects the inherent vitality of the voluntary health movement in this country."

ARMED FORCES HAVE TOO MANY DOCTORS

The number of physicians who have volunteered for active duty in the armed forces now far exceeds present medical officer requirements. And, according to a recent news release from the AMA, despite this the Selective Service System refused to cancel its latest physician draft call which forced 524 physicians to accept reserve commissions and apply for immediate active duty or be drafted as privates.

The release then outlines the disastrous long-range effects which will result from this call-up:

1. A wastage of medical manpower resulting in a reduction in the number of physicians available to care for the civilian population.

2. A tendency to use excess medical officers on nonmilitary assignments.

3. A squandering of available medical registrants under the "Doctor-Draft law" which would accelerate the call-up of doctors in priorities 3 and 4.

4. An inefficient utilization of physicians in uniform, with a resulting lowering of morale and general dissatisfaction with military service.

5. A nullification of the newly established ratio of 3.0 per thousand between medical and over-all troup strength.

Quoting from an editorial in the *Journal of the American Medical Association,* the release stated: "It appears to be certain not only that the current draft call was unnecessary but that there will be no more such calls for many, many months to come." The editorial added:

> "Acting in good faith and on the basis of the assertions by officials in Washington that medical personnel was sorely needed, many of these men have closed their offices or have discontinued their plans for additional residency or postgraduate training. In many instances this discontinuance of training was forced on them because of the prohibition that prevented hospitals from accepting priority 1 and 2 men to fill available residency vacancies.
>
> "Having terminated their civilian commitments on the assumption that they were needed immediately by the armed forces, these physicians are now faced with the prospect of an indefinite status for the next year or more. Possibly it is still not too late for many of them to change their plans, to request a delay in call to active duty, and resume their civilian occupations.
>
> "The government officials charged with the administration of the 'Doctor-Draft law' are obligated to call to active duty only those physicians who are needed and immediately to advise medical reservists as well as Selective Service medical registrants when they can expect to be called for military service."

GOVERNMENT SURVEY SHOWS VA ABUSES

Suspicions that VA hospitals were abusing the system of medical care for veterans, were confirmed this summer by studies of the government's General Accounting Office. This office tested 350 veterans recently discharged from VA hospitals, and the following was brought to light: Among the discharged veterans who had been treated free at government expense, it was found that incomes ranged from $4,000 to $50,000 a year. Over and above mere annual income they found 25 cases where the veteran possessed real property and other assets between $20,000 and $500,000.

One of the officials of the GAO had this comment to make: "It is clear that there are veterans being hospitalized on the basis of the unable-to-pay affidavit prescribed in the present law who are fully able to pay for their hospitalization and others who are able to pay in part. The present law and regulations in effect discriminate against the more honest class of applicants. In short, the veteran in ordinary circumstances must either perjure himself or be deprived of a benefit freely given to other veterans similarly circumstanced, perhaps less worthy of care at public expense."

It is clear too, that some sort of remedial action should be worked out. It is possible that a step on the way to solution will be pointed out by the House of Delegates of the American Medical Association when it meets in St. Louis in December. Much serious thinking has taken place on this matter ever since it was first brought up, and it is to be hoped that those responsible for policy will be guided by all thoughts and opinions available on this very important topic.

CHICAGO DOCTORS NOW CALLED BY RADIO

Sherman Amsden, who has operated a Doctors' Telephone Service in New York for thirty-one years, has inaugurated an Aircall Radiopaging Service in Chicago.

Aircall has been operating in New York for the past two years. Delay in bringing the service to Chicago was caused by the unraveling of red tape connected with the construction permit.

The Aircall radio station now is being built atop Chicago's third tallest building.

Minnesota Academy of Medicine

Meeting of February 11, 1953

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, February 11, 1953. Dinner was served at 7 o'clock and the meeting was called to order at 8:10 by the President, Dr. E. A. Regnier.

There were thirty-one members present.

Minutes of the December and January meetings were read and approved.

The scientific meeting followed.

Dr. Leo Culligan, Minneapolis, read his Inaugural Thesis entitled "Bowel Obstructions during the Postoperative Period." Lantern slides were shown. (To be published later.)

The meeting was adjourned.

Robert E. Priest, M.D., *Secretary*

Meeting of March 11, 1953

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and County Club on Wednesday evening, March 11, 1953. Dinner was served at 7 o'clock and the meeting was called to order at 8:15 p.m. by Dr. O. H. Wangensteen in the absence of the President, Dr. Regnier.

There were forty-seven members and four guests present.

Minutes of the February meeting were read and approved.

There was no business meeting and the scientific program followed.

Dr. Richard L. Varco, University of Minnesota, gave his Inaugural Thesis which consisted of a lantern slide talk entitled "Operative Cholangiography Techniques and their Application to Certain Hepatic and Biliary Problems."

Discussion

Dr. A. A. Zierold, Minneapolis: It is most interesting to hear Dr. Varco speak of something in which we at General Hospital have been interested for some time and to have someone present cholangiograms which are real cholangiograms. There is one thing I would like to add to what Dr. Varco intimated but did not emphasize. Operative cholangiography is not a casual thing, to be done when you have the leisure. In my practice, it is a routine procedure incidental to cholecystectomy. When we remove gall bladders, we remove them because they contain stones and for no other reason. If the gall bladder contains stones, it is potentially a cause of stones in the common duct. I am unable to identify common duct stones by inspection or palpation of the common duct. Consequently, when I remove a gall bladder, I make a cholangiogram. We are all plagued by the recurrent symptoms following cholecystectomy, but I believe that when one analyzes his own experiences together with the literature, he will find that most recurrences of so-called "gall-bladder" symptoms occur in patients who should not have had a cholecystectomy to begin with. Nevertheless, real cases do exist. Of these, some represent retained common duct stones and a few must be classed as biliary dyskinesia. These must be carefully examined. If, after the administration of morphine or codeine, the patient's symptoms can be reproduced, accompanied by a rise in serum amylase, sphincter spasm must be considered. If, after administration of banthine, this symptom complex cannot be produced by morphine or codeine, I believe that transduodenal sphincter section is indicated.

Dr. C. J. Watson, University of Minnesota: I have been delighted with Dr. Varco's interest in this subject and with the co-operation and painstaking care he has taken in a number of our cases of jaundice. I think the operative cholangiogram has largely removed the problem of residual, postoperative common duct stones. Back a few years, it was not uncommon for one of our patients to have an operation for common duct stone only to come back later with the same symptoms and the necessity of one or more additional operations. I can't remember having such a case now for five or six years. These films that Dr. Varco has shown are good evidence of why we don't see such situations any more. I take it for granted that if the common duct is opened at operation, we have to have a cholangiogram then, on the table.

A problem that requires the most meticulous care in diagnosis is in the jaundiced patient, especially when older and very sick. The distinction of biliary tract disease from diffuse parenchymal jaundice, and the consequent decision whether to operate or not, may be extremely difficult. I have seen a number of individuals who were operated upon with the thought that they had common duct obstruction, but who had hepatitis. This error is especially easy when the patient has had cholecystectomy in the recent past, and has acquired homologous serum hepatitis as a sequel to it.

We think we removed the jeopardy to the patient with marked jaundice by having a small laparotomy under local anesthesia, rather than a formal choledochostomy. If the cholangiogram shows that the common duct is open, then we feel confident the patient has diffuse liver disease as the cause of his jaundice, rather than a stone or tumor. I have been very glad to hear Dr. Varco's presentation, and I am sure he has helped us immensely.

Dr. J. Richard Aurelius, Saint Paul: It is really quite stimulating to have a discussion on operative cholangiography based on films that are of good diagnostic quality. I think Dr. Varco has shown us as interesting a group of films as we have seen for a long time. He has shown the advantage of having a Potter-Bucky type of diaphragm incorporated in the table and adequate power in the x-ray machine to enable fast techniques. I think the surgeons should be more critical of the operative cholangiograms and demand, so far as conditions permit, that the radiologic departments of our hospitals produce

(Continued on Page 1173)

Minnesota Department of Health

HOSPITAL PERSONNEL SHORTAGE

Recently the chiefs of staff of all Minnesota hospitals received a brochure entitled "Meeting Your Hospital Personnel Shortage," published by the Health Resources Advisory Committee of the Office of Defense Mobilization. This topic is of such vital importance today that it warrants serious consideration regardless of the individual hospital's present ability to secure an adequate staff. Dr. Howard A. Rusk, Chairman, Health Resources Advisory Committee, states, ". . . we may well be faced with a national emergency unless steps are taken to make better use of professional nursing skills and to recruit, train and utilize effectively, paramedical personnel and other types of hospital workers."

The brochure outlines the problem of hospital personnel shortages and suggests thirteen ways in which hospitals, physicians and nurses can act to minimize the problem. These suggestions, which have proven successful in many hospitals, call for recognition of the present trends in medical care, objective analysis of traditional staffing patterns and maximum utilization of personnel. Hospitals are called upon to adopt improved methods of recruitment, training and utilization of personnel and continuous in-service training for professional nurses, paramedical personnel and other hospital workers.

Minnesota Takes Action

Three years ago the Minnesota State Medical Association, in conjunction with the Minnesota Hospital Association, the Minnesota Department of Health, the University of Minnesota, the Minnesota Society of Clinical Pathologists and the Minnesota Radiological Society undertook to study the shortage of laboratory and x-ray personnel. This group concluded that there was a need to expand approved training facilities, to establish short courses for aides, to intensify recruitment efforts to fill vacancies in approved courses and to provide refresher training for those presently employed. During the past two years five refresher courses for laboratory technicians and seven for x-ray technicians have been held in various regions of the state under the joint sponsorships of the groups mentioned above and the societies of medical technologists and x-ray technicians. These programs have been successful in reaching many persons unable to attend state meetings, continuation courses, etc., and the subject matter has been tailored to fit the everyday problems of those attending.

Recognizing the need for organized training for medical record workers, the sponsors have joined with the Minnesota Association of Medical Record Librarians to offer a three-day Institute for Medical Record Personnel. The institute, which was held at St. Francis Hospital, Breckenridge, on October 29, 30 and 31, placed emphasis on the basic principles of medical record keeping, the use of indexes and statistics, medical terminology and the Standard Nomenclature of Diseases and Operations.

The nutritionists on the staff of the Minnesota Department of Health have held one-day group meetings for dietary service personnel at four centrally located hospitals in northern Minnesota. Pre-meeting surveys of problems were made and the discussions held on those most pertinent to the particular group. From these meetings it appears that assistance is needed with problems of special diets, menu planning and food purchasing. Similar meetings are being planned for other areas of the state and it is believed that this experience will form the basis for the development of a continuing educational program in conjunction with the Minnesota Dietetic Association. Discussion of the use of the new therapeutic nutrition manual which has been prepared by the Minnesota Dietetic and Home Economics Associations will be included in future meetings. Use of this diet manual tends to simplify the work of the hospital in special diet calculation and to keep the cost of special diets reasonable. This program appears to be especially valuable to those hospitals without a professional dietitian.

The problem of providing anesthesia services in the smaller hospitals is being considered in discussions with interested professional groups. A survey of existing and needed services and personnel will probably be undertaken this fall to develop a basis for approach. The co-operation of all hospitals will facilitate the solution of the questions involved. There has been considerable discussion relative to the possibilities of providing some basic information for hospital and medical personnel on the subject of rehabilitation.

New Courses Instituted

The training of aides or assistants is essential to make maximum use of professionally trained paramedical personnel. In accord with this thinking, a twelve-month course for laboratory aides was established this fall consisting of two quarters of theoretical training at the University of Minnesota and six months' experience in selected hospital laboratories. Although the enrolment in this first course is not large it may well be the forerunner of future courses in other teaching institutions throughout the state. A new approach to the training of x-ray technicians was instituted in July. The course consists of three months' study at the University and a minimum of one year of practical training at an established hospital school of x-ray technique or the x-ray department of a hospital supervised by a radiologist. This program relieves the hospital from the responsibility for didactic training, makes it possible for any hospital with an x-ray department supervised by a radiologist to train technicians and provides the technician with a sound preparation for further training and advancement in the field. Another class will begin in January, 1954. In June, 1953, the Council on Medical Education and Hospitals of the American Medical Association approved the establishment of courses for the training of medical record technicians. At least one Minnesota hospital has applied for approval of such a course.

Recruitment Program Under Way

Undoubtedly, an intensive recruitment program is the key to increasing the supply of paramedical workers. Although nurse recruitment has been organized on a national scale, still more nurses are needed. The recruitment for the paramedical professions in past years was almost entirely limited to the personal contacts of individual training schools and many vacancies existed each year. Those responsible for counseling young people in schools and colleges for the most part, have had little information about the hospital field and the opportunities in these professions. During the past year the state hospital, medical and nursing associations, the Minnesota Department of Health and all the other state organizations representing hospital professions have joined forces to promote recruitment activities. One of the first activities of this group was the development of a four-page brochure which was distributed to high school seniors in Minnesota and adjoining states. Copies were also sent to all physicians and hospitals throughout the state. In addition to the immediate benefit to the participating groups in the exchange of information concerning recruitment techniques and joint promotional activity, the joint committee has focused attention to the need for personnel in these fields. A number of other groups are interested. The Women's Auxiliary to the Minnesota State Medical Association has made recruitment a principal project during the coming year. School health directors and counselors, the State Departments of Education and Employment Security have become interested. Although it is difficult to assess the direct value of programs such as this, several hospital training schools report that they are receiving more inquiries than in former years. A recent publication of the U. S. Department of Labor entitled "The Shortage of Young Women Workers" points out the limited supply of young unmarried women which will exist for a number of years. With jobs of immediate promise open, the pamphlet states, it is difficult for young people to decide on a career which requires several years of additional training. It is necessary, therefore, to bring to these young people an understanding of the future of the professional fields and the rewards and satisfactions in a career in the field of health.

Individual Action Necessary

Minnesota has been alert to the need for action to meet the critical shortage of health manpower. As outlined above there has been an excellent spirit of co-operation between interested organizations at the state level. This co-operation is expected to continue and in those problems which can be approached on a statewide basis, efforts will be made to initiate remedial action. However, the brochure of the Office of Defense Mobilization, "Meeting Your Hospital Personnel Shortages" lists a great many things which can be done by the individual hospital, by the hospital administrators, trustees, physicians and personnel to conserve and to make the most effective use of personnel available The ultimate success of the program suggested lies in its application in every hospital. The success of each hospital in applying the suggested practices must be passed along so that others may benefit by this experience. Co-operation between hospitals is, therefore, imperative. Not only should there be a free exchange of ideas and suggestions but in many instances personnel may also be shared. Highly trained professional personnel often are not utilized to capacity in the smaller hospitals and sharing such services would not only make maximum use of these services but would also permit the smaller hospitals to enjoy them at a cost which it could afford.

A great deal of progress has been made in recognition of the problems existing and in suggesting solutions. It remains for all people in the health professions, individually and collectively, to analyze the situations objectively and institute appropriate actions. Only in making use of every possible means can the objective of providing the personnel for adequate patient care be met.

MINNESOTA ACADEMY OF MEDICINE

(Continued from Page 1171)

satisfactory studies. Until we do have proper physical equipment we are going to continue to give inadequate service at the operating table in respect to residual calculi in the biliary ducts. It is the small intra-hepatic duct calculus that is so hard to find. I had the privilege of visiting the University Hospital at Lund, Sweden, a few years ago and there they have been making every possible effort to search out the residual calculus. With their equipment they are able to produce operative cholangiograms at 1/10th of a second exposure using the Bucky diaphragm and full-powered x-ray generators and it has allowed them to find many calculi remaining in the ducts that otherwise would have been missed. They still find they need to re-operate about 5 to 10 per cent of their stone cases for stones that later dislodge in spite of the fact that at the operation they do a primary cholangiogram and, before closing, a second cholangiogram to see if any residual stones can be detected. It would seem, therefore, that we might do better in our hospitals in having essential equipment available in the operating room for so important a function in support of gall-stone surgery. Dr. Varco has shown us a relatively inexpensive method for operative cholangiography. We are, indeed, grateful to him for this very constructive presentation.

Dr. Carleton B. Chapman, University of Minnesota, (by invitation) gave a talk on "Michael Servetus and the Pulmonary Circulation."

The meeting adjourned.

Robert E. Priest, M.D., *Secretary*

◆ Reports and Announcements ◆

AMERICAN ACADEMY OF GENERAL PRACTICE TO HOLD SIXTH ANNUAL SCIENTIFIC ASSEMBLY

The American Academy of General Practice makes the first official announcement of its Sixth Annual Scientific Assembly which will be held March 22-25, 1954, in Public Auditorium, Cleveland, Ohio. Topflight men as Sir Alexander Fleming, Dr. Howard Rusk, and Dr. E J. McCormick, are headlining the program.

The entire program will be presented by men of equal note and by leaders in the fields to be covered. The Committee on Scientific Assembly, headed by Dr. John Mosher, of Coeymans, New York, promises that these four days will be pleasant, as well as instructive.

A quick look at the program shows symposia on peptic ulcer tuberculosis, headache and dizziness, and antibiotics; a live clinic on rehabilitation procedures, presentations on the commonly missed diagnoses of skin diseases, the almost forgotten woman—the routine multipara, and unnecessary gynecologic surgery, arthritis, anemia, surgical problems, and the reecnt advances in therapeutics, will also be covered.

To supplement the formal lecture program, the Committee is putting together a scientific exhibit section which will include more than sixty exhibits. At least half of them will be original, making their debut at this meeting. All of them will be closely integrated with the lecture program.

A social program is being planned for the wives culminating with a President's Reception, the first the Academy has had, for the entire attendance.

NEW ORLEANS GRADUATE MEDICAL ASSEMBLY

The seventeenth annual meeting of The New Orleans Graduate Medical Assembly will be held March 8 to 11, 1954, headquarters at the Municipal Auditorium.

Eighteen outstanding guest speakers will participate and their presentations will be of interest to both specialists and general practitioners. The program will include fifty-four informative discussions on many topics of current medical interest, in addition to clinicopathologic conferences, symposia, three dimensional surgical motion pictures, round-table luncheons and technical exhibits.

The Assembly has planned another interesting postclinical tour to follow the 1954 meeting in New Orleans. On Sunday, March 14, the group will leave Los Angeles via Pan American World Airways and accommodations have been secured at the Royal Hawaiian Hotel in Honolulu, Island of Oahu.

After an interesting sightseeing schedule, the group will leave on Wednesday, March 17, for the Island of Kauai, where reservations have been made at the Kauai Inn. Visits will also be made to Hilo and the Kona Coast. The party will return to Honolulu for several days prior to sailing on the *S. S. Lurline* on Thursday, April 1. Arrangements have been made for visits to hospitals and for various medical programs.

Details of the New Orleans meeting and the postclinical tour are available at the office of the Assembly, Room 103, 1430 Tulane Avenue, New Orleans 12, Louisiana.

POSTGRADUATE TEACHING FUND FOR GIFT SUBSCRIPTIONS TO HOSPITALS

The International Academy of Proctology announces the establishment of a postgraduate teaching fund to provide gift subscriptions to the *American Journal of Proctology* to 750 of the largest Hospital Libraries in this country and abroad. Inasmuch as the *American Journal of Proctology* is the only official Proctologic Journal in the world, these subscriptions will provide a continuing postgraduate course for interns, residents and hospital attending staffs in all major hospitals.

As a teaching and educational organization, the Academy is pre-eminent in Proctology. The Annual Conventions are literally postgraduate courses, and the Journal has raised the level of Proctology throughout the world.

The International Academy of Proctology recently announced the establishment of a Research Fellowship in Proctology with a grant of $1,200.00 to the Jersey City Medical Center, Jersey City, New Jersey.

MINNESOTA PUBLIC HEALTH CONFERENCE

The Minnesota Public Health Conference held its seventh annual meeting September 24-25, 1953, at the Hotel Nicollet, Minneapolis. The following officers and members of the Executive Committee were named at that time.

Officers.—President—Allan Stone, Saint Paul; First Vice President—S. A. Whitson, M.D., Albert Lea; Second Vice President—Edith Johnson, Minneapolis; Treasurer—Stewart C. Thomson, M.D., Minneapolis; Executive Secretary—D. S. Fleming, M.D., Minneapolis.

Executive Committee.—Irene Donovan, Past President, Saint Paul; Herbert M. Bosch, Minneapolis; Neola Henson, Rochester; D. R. Gillespie, M.D., Saint Paul; Mrs. C. J. Schmitz, Saint Paul; Martin H. Roepke, D.V.M., Saint Paul; W. W. Rieke, M.D., Wayzata.

MIDWINTER SEMINAR IN OPHTHALMOLOGY AND OTOLARYNGOLOGY

The eighth annual University of Florida Midwinter Seminar in Ophthalmology and Otolaryngology will be held at the Sans Souci Hotel in Miami Beach the week of January 18, 1954. The lectures on Ophthalmology will be presented on January 18, 19 and 20, and those on Otolaryngology on January 21, 22 and 23. A midweek

(Continued on Page 1176)

Various factors during pregnancy (intestinal displacement, atony, inactivity) make it virtually impossible for most women to go through the gestation period without constipation.

CONSTIPATION IN PREGNANCY:

Satisfactorily controlled with Metamucil®

Metamucil, with its physiologic principles of "smoothage" and "normohydration," is well tolerated for pregnancy constipation. This bland vegetable colloid may be used throughout the entire nine-month period without fear of forming a "habit" and without irritation to the mucosa.

Greenhill[1] suggests that Metamucil be given every other night. He also recommends that Metamucil be given in conjunction with a proper diet, during the lying-in period of the puerperium.

Metamucil is the highly refined mucilloid of Plantago ovata (50%), a seed of the psyllium group, combined with dextrose (50%) as a dispersing agent. It is accepted by the Council on Pharmacy and Chemistry of the American Medical Association.

[1] Greenhill, J. P.: Principles and Practice of Obstetrics, ed. 10, Philadelphia, W. B. Saunders Company, 1951, pp. 103-104; 311; 332.

SEARLE Research in the Service of Medicine

MIDWINTER SEMINAR IN OPHTHALMOLOGY AND OTOLARYNGOLOGY

(Continued from Page 1174)

feature will be the Midwinter Convention of the Florida Society of Ophthalmology and Otolaryngology on Wednesday afternoon, January 20, to which all registrants are invited. The registrants and their wives may also attend the informal banquet at 8 p. m. on Wednesday. The Seminar schedule permits ample time for recreation.

The Seminar lecturers on Ophthalmology this year are Dr. W. B. Anderson, Durham, N. C.; Dr. W. P. Beetham, Boston; Dr. W. C. Owens, Baltimore; Dr. A. B. Reese and Dr. M. C. Wheeler, both of New York City. Those lecturing on Otolaryngology are Dr. E. N. Broyles, Baltimore; Dr. H. P. House, Los Angeles; Dr. W. M. McNally, Montreal, Canada; Dr. Dorothy Wolff and Dr. D. Woodman, New York City.

PUBLIC HEALTH NURSE CIVIL SERVICE EXAMINATIONS

Applications for public health nurses' civil service appointments are being accepted at 109 City Hill, Minneapolis. Applicants must be eligible for nurses' registration in Minnesota; must be professionally prepared for public health nursing by "completion of an educational program in nursing approved for public health nursing by the National Nursing Accrediting Service," and in addition, must have a baccalaureate degree or, must have a minimum of one year of experience on the staff of a public health nursing agency rendering a family health service, and offering adequate nursing supervision under the latter; applicants, upon being certified to a position, must plan and carry out a program of study leading to the completion of the requirements for a baccalaureate degree.

Satisfactory evidence of meeting the education and experience requirements should be submitted at the time of filing application.

CONTINUATION COURSE

The University of Minnesota will present a continuation course in *Pediatrics for General Physicians* next January 7 to 9, 1954, at the Center for Continuation Study. Recent advances in the management of common pediatric problems will be stressed. Care of the premature infant will be discussed, and the therapy of burns will be taken up along with many other topics of general interest. The course will be presented under the direction of Dr. Irvine McQuarrie, Professor and Head, Department of Pediatrics at the University of Minnesota.

HENNEPIN COUNTY MEDICAL SOCIETY

Dr. John H. Moe was installed as president of the Hennepin County Medical Society, October 5, succeeding Dr. Claude J. Ehrenberg, who became chairman of the board of directors. Dr. Willis L. Herbert became vice president; Dr. Charles A. Aling, second vice president;

ANNUAL CLINICAL CONFERENCE

CHICAGO MEDICAL SOCIETY

March 2, 3, 4, 5, 1954 • Palmer House, Chicago

DAILY HALF-HOUR LECTURES BY OUTSTANDING TEACHERS AND SPEAKERS on subjects of interest to both general practitioner and specialist.

PANELS ON TIMELY TOPICS.

MEDICAL COLOR TELECASTS.

TEACHING DEMONSTRATIONS.

SCIENTIFIC EXHIBITS worthy of real study and helpful and time-saving **TECHNICAL EXHIBITS.**

The CHICAGO MEDICAL SOCIETY ANNUAL CLINICAL CONFERENCE should be a MUST on the calendar of every physician. Plan now to attend and make your reservation at the Palmer House.

. . . now conveniently located for faster service

You need no longer risk driving through congested traffic to examine new equipment. In this new, modern store you will find complete stocks of instruments and supplies for the physician; model displays of hospital equipment of every type; and a comprehensive range of equipment, apparatus and supplies for the modern medical laboratory. We cordially invite you to visit us at your convenience, or call us for prompt emergency service. Free parking is provided adjacent to building. Telephone: LIncoln 7601.

ALOE
A.S. ALOE CO.
a. s. aloe company OF MINNESOTA • 927 Portland Ave. • Minneapolis 4, Minn.

Dr. Conrad J. Holmberg, secretary-treasurer, and Dr. Tague C. Chisholm, librarian.

Board members include the officers and Dr. Silas C. Andersen, Dr. Ralph H. Creighton, Dr. L. Haynes Fowler, Dr. Thomas J. Kinsella, Dr. Robert F. McGandy, Dr. Robert E. Priest, and Dr. Horatio B. Sweetser, sixth district councilor of the Minnesota State Medical Association.

LINCOLN-LYON COUNTY POSTGRADUATE EXTENSION COURSE

The Lincoln-Lyon County Medical Society launched its forty-eighth semiannual postgraduate extension course at the Atlantic Hotel, Marshall, September 29. The program for the six-week period (one lecture each week) was outlined as follows:

September 29, "Liver Function Tests, and Discussion of Pathological Problems," by Dr. R. W. Kouchy, Department of Pathology, Fairview Hospital, Minneapolis.

October 6, "Urology from a Medical Standpoint. Diagnosis and Treatment of Urinary Tract Infections," by Dr. W. A. Merritt, Mayo Clinic, Rochester.

October 13, "Medical Problems," by O. J. Campbell, Minneapolis, President, Minnesota Medical Association.

October 20, "Doctor-Pharmacist"—courtesy meeting to the Lyon-Lincoln and Minnesota Pharmaceutical Associations, by K. C. Mattison, President, and Henry M. Moen, Executive Secretary.

October 27, "Endometriosis, Diagnosis and Treatment," by Leonard A. Lang, Department of Obstetrics and Gynecology, University of Minnesota Medical School, Minneapolis.

November 3, "Peripheral Vascular Disease," by H. O. McPheeters, general surgeon, specializing in vascular diseases, Minneapolis.

SOUTHERN MINNESOTA MEDICAL ASSOCIATION

Dr. William C. Bernstein, of Saint Paul, was elected president of the Southern Minnesota Medical Association, at the annual meeting, held September 14, in Mankato. Dr. D. P. Anderson, of Austin, was elected vice president, and Dr. Charles Stroebel, of Rochester, secretary-treasurer. Winona was selected for the 1954 annual meeting.

Hall, Anderson & Nordehn

PRESCRIPTION PHARMACY
BIOLOGICALS
PHYSICIANS' SUPPLIES

SAINT PAUL, MINN.

LOWRY MEDICAL ARTS BUILDING
TELEPHONE: CEDAR 2735

Woman's Auxiliary

FIRST REGIONAL CONFERENCE HELD AT WORTHINGTON

The first of a series of Regional Conferences to be held in many parts of the state under the auspices of the Woman's Auxiliary to the Minnesota State Medical Association was held on Monday, September 21, at Worthington. More than twenty-five women attended the luncheon and afternoon program arranged by Mrs. Henry W. Quist, Sr., of Minneapolis, president of the state organization, and Mrs. O. M. Heiberg of Worthington, regional advisor. They came from all the southwestern counties of the state.

The program which followed the luncheon was designed to bring members of the district up to date on all organization problems and responsibilities and also on the special civic and health programs of particular interest to doctors' wives.

Mrs. Quist presided and welcomed the women on behalf of the state organization. Mrs. Peter S. Rudie, president-elect of the state auxiliary, talked over membership problems, urging all the women present to regard themselves as members of organization committees charged with the duty of bringing in new members and retaining old ones. Mrs. Rudie also asked all auxiliary members to read the *Bulletin of the Woman's Auxiliary to the American Medical Association* and the Handbook and *Today's Health* to keep up to date and urged them, especially, to regard auxiliary membership as a privilege as well as a responsibility.

Mrs. L. J. Leonard, of Minneapolis, addressed the women on the subject of mental health in Minnesota and the part that auxiliaries can play in fostering a co-ordinated and effective program in the state. She said that 25 to 30 per cent of the tax dollar went for maintenance of mental hospitals in Minnesota last year—a staggering sum amounting to considerably more than was spent for all institutions of higher learning in the state—and it went for the care rather than the cure of the mentally ill.

Doctors' wives have a tremendous opportunity to extend public education on mental health, Mrs. Leonard said, and she urged that every local auxiliary put mental health education on its program for this year. She suggested, further, that auxiliary members inform themselves on the subject in study groups, by means of lectures and motion pictures in close cooperation with medical societies and advisors.

The problem of supplying hospitals and medical groups all over the state with trained personnel was presented to the auxiliary members present by Mrs. W. G. Johanson of Saint Paul. Minnesota hospitals are short hundreds of trained people, Mrs. Johnson said, including anesthetists, dietitians, medical record librarians, medical social workers, medical technologists, nurses, occupational therapists, and x-ray technicians. She urged the women to make a new effort to reach all the young people in their communities with information about the opportunities and satisfactions to be had in all these allied medical careers. Especially, she suggested that they secure brochures on the subject for distribution to students in the ninth and tenth grades in their local high schools and inform themselves, also, about scholarships and student loan funds available to qualified applicants from both public and private sources.

Program planning was discussed by Mrs. D. J. Halpern of Brewster. "Community health plans don't just happen," Mrs. Halpern told the women. "Someone has to lay the groundwork and auxiliary members, by the very nature of their organization and association with doctors' organizations, are in a position to offer leadership in working out these plans."

For that reason programs should be suitable for medical auxiliaries, not just for women's clubs, Mrs. Halpern said. She suggested the following subjects for consideration, with the approval of medical advisors: civil defense plans in local areas; legislation reports; rural health; "Health Days" for auxiliaries; American Medical Education Foundation fund raising; cancer; heart; polio; cerebral palsy; the Red Cross blood program. In addition, she emphasized the importance of mental health and of the promotion of training for allied medical careers as subjects for auxiliary consideration. She also suggested that each auxiliary consider the following ten questions as applied to its own local community needs and with a view to the development of its own community work.

1. Who guards your community's health?
2. What agencies and organizations co-operate with the health department?
3. How do you care for the mentally ill in your community?
4. What services are available for medically handicapped children?
5. What medical and vocational rehabilitation programs are available in your community?
6. What is being done to prevent juvenile delinquency in your community?
7. What medical care, social opportunities and recreational facilities are offered to older people in your community?
8. Are health and physical fitness programs in your schools adequate?
9. How well does your community co-operate in safety programs?
10. What resources has your community for the care of the medically indigent?

Mr. Harold Brunn, field secretary of the Minnesota State Medical Association, emphasized for the women the importance of doing everything possible in each auxiliary organization to assist in recruiting personnel for hospitals.

"More trained men and women in the allied medical professions will mean better and cheaper medical service for everybody," Mr. Brunn said. The services of physicians go farther when they have properly trained assistants, he pointed out, and well-manned hospitals can take care of more people at less cost.

Mr. Brunn drew the attention of the doctors' wives to the outstanding job organized medicine has done in disciplining itself and its members. He praised, especially, the institution called the "Grievance Committee," which has been set up in many county medical societies all over the country to investigate patient complaints about medical service and fees. These committees are doing a great deal to build and cement good relations between the doctor and the public and he urged the women present to inform themselves in what their own county medical societies are doing to carry on disciplinary functions among their members and to meet and handle the occasional dissatisfied patient.

Mr. Brunn also urged the women to inform themselves and their fellow auxiliary members on the problems relating to medical care for veterans. It is the doctor's hope, he said, that the best possible care can be provided at government expense for the battle-injured veterans without overloading, at the same time, government facilities and endangering the quality of medical service for the general population.

He urged the women to work for increased membership in their organizations this year, and also for a better informed membership, since auxiliary organizations are regarded by doctors everywhere, as an indispensable aid to good public relations for the medical profession.

BLUE EARTH GROUP PLANS BUSY YEAR

Mrs. O. E. Peltola was guest speaker at the first meeting of the Woman's Auxiliary to the Blue Earth County Medical Society for the 1953-1954 season. The meeting was held October 19 at the home of Mrs. James J. Anderson, president of the organization, in Mankato. Mrs. Peltola's subject was education of the mentally retarded and, especially, recent advances in the field.

Miss Faye Reiger, head of Mankato's Rehabilitation Center and a licensed physiotherapist, addressed the Executive Board of the group at its initial session of the year, October one, at the home of Mrs. Anderson. The work of rehabilitation of the chronically disabled was described; also the usefulness of comparable treatment in easing pain and hastening recovery of patients who are suffering from acute illnesses and are referred by their physicians.

Plans for a busy year in Blue Earth county were made by the board at this meeting. Officers are Mrs. Anderson, president; Mrs. Lawrence M. Hammar, vice president; Mrs. H. Bradley Troost, secretary; Mrs. Robert B. Engstrom, treasurer; Mrs. John J. Eustermann, social chairman; Mrs. Jennings D. M. Sjoding, program chairman; Mrs. William S. Chalgren, public relations. All are from Mankato.

KNOX
GELATINE
RECIPE
BOOK
EAT AND
REDUCE
PLAN

Wide Medical Interest in New Knox Gelatine "Eat and Reduce" Plan

Developed and supervised by competent clinical authority, the new Knox "Eat and Reduce" Plan is intended especially for your overweight patients in otherwise normal health.

The plan has been tested on overweight patients with fine results. In addition, many physicians (and their families) have written us about their gratifying personal results with this plan.

The Knox "Eat and Reduce" Plan is a simple, sensible regimen that places no burden of exercise or hunger on the patient. Quite the contrary, it permits three tempting, solid meals daily, plus between-meal feedings. The menus have been carefully selected so as to provide an abundance of vitamins, minerals and protein. Many of the dishes utilize Knox Gelatine, which is, of course, all protein and no sugar — thus being an effective aid in weight reduction.

KNOX
SPARKLING
UNFLAVORED
No 1
GELATINE

AVAILABLE AT GROCERY STORES IN 4-ENVELOPE FAMILY SIZE AND 32-ENVELOPE ECONOMY SIZE PACKAGES.

Knox Gelatine U.S.P.
ALL PROTEIN NO SUGAR

USE THIS COUPON! *Write today!*
Knox Gelatine, Johnstown, New York Dept. MM

Please send me FREE copies of the "Eat and Reduce" Plan, and Diets.

Name .... M.D.

Address ....

City .... Zone .... State ....

LEGISLATIVE MATTERS GET AUXILIARY ATTENTION

Mrs. W. R. Schmidt, Legislative Chairman

Secretary Oveta Culp Hobby, of the United States Department of Health, Education and Welfare, believes that legislation to extend social security will have high priority when Congress convenes in January.

The proposal under consideration, which has the support of President Eisenhower, would extend Old Age and Survivors Insurance to 10.5 million more persons, including physicians, dentists and other groups of self-employed.

What does that mean to the medical profession? Under the law, an employer is required to withhold 1.5 per cent of the first $300 of an employe's monthly earnings and match this with a contribution from the employer of an equal amount, making a total of $9. The physician would probably pay the $9 himself.

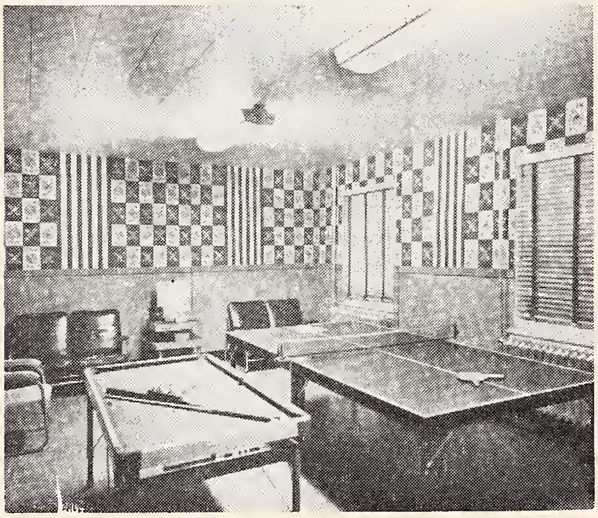
This payment continues to be made to Social Security every month until the employe has attained the age of sixty-five and retires—or any date beyond the age of sixty-five at which he chooses to retire. The individual is then entitled to receive a monthly payment from the government of $85 per month. When his wife reaches sixty-five she receives a sum of 50 per cent of that paid to her husband or $42.50. Total income per month is $127.50, and this only if the individual retires completely or earns less than $900 per year.

The American Medical Association, American Bar Association, American Dental Association, American Institute of Accountants, National Society of Engineers, American Farm Bureau Federation and virtually all other organizations representing the self-employed favor, instead, legislation of the Jenkins-Keogh bill type which would allow physicians and other self-employed persons to defer income tax payments on a portion of their income (suggested maximum figure $7,500 per year) which would be put into restricted annuity programs for eventual use as a personal retirement fund. At the time of use, of course, it would become subject to taxation as current income, but at a lower rate. Not one cent of such a retirement fund would be paid by the government.

The tax-deferral provision would be of particular benefit to physicians who go through long and costly training periods and whose earnings are compressed into a comparatively short period.

According to latest statistics the average physician begins his practice at the age of thirty-two years. After a period of years of building a practice he reaches a peak earning power which continues for an average of only fifteen years during which he is subject to high income tax which seriously handicaps him in setting up an adequate fund for his later years. Most physicians prefer to ease up their activity rather than to retire completely.

These then are the facts. It is impossible for doctors and their wives to remain apathetic in a matter so



Recreation Room

Saint Paul's Exclusive

CRESTVIEW
NEUROPSYCHIATRIC
HOSPITAL

New . . Modern . . Complete . .

Providing the highest standard of service at the lowest cost.

- **Occupational therapy and recreational department.**
- **Complete X-ray and laboratory.**
- **Electrocardiography—basal metabolism.**
- **Electroencephalography available.**
- **All patients rooms air-conditioned.**
- **Background music and psychotherapy sound equipment.**
- **Medically staffed by every neurologist and psychiatrist in Saint Paul.**
- **Especially trained nursing staff.**

Crestview
C H
Hospital
SAINT PAUL

MEMBER of the American Hospital Association
MEMBER of the Minnesota Hospital Association
APPROVED by the Minnesota State Medical Association
and the Ramsey County Medical Society.

CRESTVIEW HOSPITAL • 145 W. College Ave., St. Paul
GArfield 5841
A non-profit organization

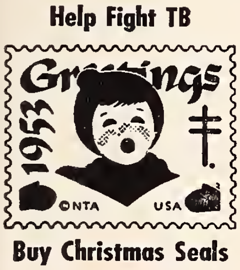
AMERICAN HOSPITAL ASSOCIATION
NISI DOMINUS FRUSTRA
MEMBER

vital. If Auxiliary members take no action at this time others will make the decision for them.

The Treasury Department views the Jenkins-Keogh proposal with disfavor, but many legislators are sympathetic toward it, including Representative Walter H. Judd of Minnesota and Representative Carl Curtis of Nebraska, chairman of a Ways and Means sub-committee now analyzing the Social Security program.

Now is the time for doctors' wives to discuss these plans, to make a choice, and to make certain that legislators are made aware of medicine's views. A personal letter in longhand carries great weight with Senators or Representatives. Do not postpone writing it until it is too late.

MRS. QUIST ASKS MEMBERS TO SUPPORT CHRISTMAS SEALS



"The singing child on the 1953 Christmas Seal asks for your help—to defeat tuberculosis, a disease which threatens his future and that of all children everywhere. Members of our Auxiliary, throughout Minnesota, have taken an active part for many years in helping the Christmas Seal sale through volunteer services of many kinds and in assisting our Christmas Seal organizations in their work. This 1953 Christmas Seal, symbolizing the protection of children from disease, should inspire us to even greater efforts."

This is the appeal in behalf of the 1953 Christmas Seal sale, which begins in Minnesota and throughout the nation on November 16, made by Mrs. Henry W. Quist, Sr., President of the Woman's Auxiliary to the Minnesota State Medical Association.

The present status of the tuberculosis problem in 12 midwestern states was revealed to some 700 public health workers and physicians attending the Mississippi Valley Conference on Tuberculosis in Minneapolis recently (October 15, 16 and 17). A giant chart indicated that in this area with a population of approximately 44,000,000 and 141 tuberculosis sanatoria, there were 7,093 deaths from tuberculosis in 1951 and 27,568 *new* cases of tuberculosis in 1952.

Speakers at the conference emphasized that:

Drugs Are Life-Saving

New methods of treatment—the new drugs and surgery—are saving the lives of many tuberculosis patients who otherwise would have died.

More cases of unsuspected tuberculosis are being found through X-ray surveys of the general population and of special groups, such as the x-raying of all patients admitted to hospitals for any cause.

With *more living patients* being discharged from tuberculosis hospitals to return to their families and the community, there is more work to be done in helping the tuberculosis patient and his family back to normal living.

"As I travel through the state, I am always impressed by the active part our membership is taking in tuberculosis control," Mrs. Quist said. "Auxiliary members serve on Speakers Bureaus giving many groups information about tuberculosis. They help prepare the Christmas Seal letters for mailing. They sell Christmas Seals from booths in stores and post offices. Many of our members attend the annual course for volunteer tuberculosis workers at the University's Continuation Center. We help with the sales of handwork made by tuberculosis patients, usually assuming the entire responsibility for this project.

Efforts Must Be Increased

"Since the protection of the health of our people is one of our basic purposes, we are interested in all of the work being done by our tuberculosis organizations to prevent the spread of this disease. The present situation in tuberculosis control—the fact that the number of living patients has not decreased, and in some places is actually increasing, means that we should increase our efforts to help in this work."

Last year, Christmas Seal Mobile Units gave Minnesota people more than 100,000 free chest x-rays. Tuberculosis associations aided our hospitals in establishing and maintaining a chest x-ray service for all patients and hospital staffs. Thousands of children and adults were given information about tuberculosis. Boards of education were urged to require annual chest x-rays of all teachers. Tuberculin testing of pre-school age children was urged to locate unsuspected sources of infection among adults. These and many other services are made possible by the annual sale of Christmas Seals.

The completely new . . .

A
B
C
D
E
ALL AMERICAN*
athletic glasses
designed for rough treatment

A. EXTRA STURDY ALL-METAL FRAME
B. "CUSHION FIT" SHOCK ABSORBENT RUBBER NOSE PIECE
C. ENDS COVERED TO PROTECT OTHER PLAYERS
D. SAFETY PRESCRIPTION LENSES WITH HIGH BASE CURVE
E. EXPANSIBLE, ADJUSTABLE "GLASS GARD"* HEADBAND

- One Price for All Prescriptions up to and Including 7 Diopters—Case Included
- Order Complete Sample Available at Nominal Cost or Write for Further Information

*Pat. Pend.

Since 1913 Benson OPTICAL COMPANY EXECUTIVE OFFICES MINNEAPOLIS, MINNESOTA

Complete Laboratories in Minneapolis and Principal Cities of Upper Midwest

In Memoriam

ARTHUR EDWIN BENJAMIN

Dr. Arthur Edwin Benjamin, a distinguished Minneapolis surgeon and gynecologist for more than sixty years, died at Northwestern Hospital in Minneapolis, Thursday, October 1, 1953. He was eight-four years old.

Dr. Benjamin received his degree in medicine from the University of Minnesota medical school in 1892 and by 1915, after extensive postgraduate study in New York, London and Vienna, he had assumed a position of leadership in the rapidly expanding fields of surgery and gynecology which he held for half a century in Minneapolis.

He was born in Hutchinson, Minnesota, in 1868, in a family of physicians. His grandfather and his father, Dr. John Benjamin of Hutchinson, were both physicians and he is survived by two sons, Edwin G. and Harold G., both of whom are practicing medicine in Minneapolis.

It was in 1915 that Dr. Benjamin became chief of the gynecological section at Minneapolis General Hospital; but he had been associated as a teacher with the medical school since 1890 when he became clinical instructor in gynecology and he remained on the teaching staff as Assistant Professor of Obstetrics and Gynecology until his retirement in 1938, with rank of professor emeritus. He was also a captain in the Army Medical Corps from 1917 to 1918.

During all the years of his teaching and his private medical practice he was associated, often in an executive capacity, with a long list of scientific, professional, civic and humanitarian organizations and he also occupied an established position in the social and cultural life of Minneapolis.

He was a member of the staffs of St. Barnabas and Northwestern hospitals, having served as chief of staff at the latter, and he continued as consultant at Minneapolis General Hospital after his retirement in 1938 as chief of the gynecological section.

He was a former president of the Alumni Association of the University of Minnesota Medical School, a member of the Minnesota Academy of Medicine, the Western Surgical Association, the American College of Surgeons, the Southern Minnesota Medical Association, the Minnesota State Medical Association, the American Medical Association and the Hennepin County Medical Society, of which he was a former president. He was also a member of the committee of five that raised money to purchase the land on which the University hospitals now stand.

Among other associations in which Dr. Benjamin took an active part were the Foreign Policy Association, the Minneapolis Institute of Arts, the Hennepin County Tuberculosis Association, the Minnesota Historical Society and the Associated Charities. He was also a member of the Minneapolis Club, the Minneapolis Executive Club, the Six O'clock Club, and he was a former president of the Professional Men's Club. He was likewise a member of the board of trustees of Plymouth Congregational Church; and he was a Mason, a member of University Lodge, the Scottish Rite, 32nd degree, and the Zuhrah Temple of the Shrine.

The home built by Dr. Benjamin just after his marriage in 1900 at 2222 Blaisdell Avenue in Minneapolis has remained the family home and was, at that time, the first lot sold in Dayton's addition, then a country-side real estate development platted on Blaisdell's farm. Mrs. Benjamin died in 1951.

Dr. Benjamin is survived by his two sons, and two daughters, Alice, who is now principal of Summit School in Saint Paul, and Mrs. Charles J. Hoover of St. Louis Park; also a sister, Mrs. Olive Bacon of San Gabriel, California, and a brother, Dr. Winfred G. Benjamin of Minneapolis, a dentist.

ALPHONSE CYR

Dr. Alphonse Cyr, a pioneer Barnesville physician, died at eighty-one on September 19, 1953, in a Fargo hospital. Dr. Cyr was born in Montreal, Canada, and received his medical degree from Laval University, now the University of Montreal. He came to Minnesota in 1900 and opened his practice in Barnesville in 1906. He remained there, with the exception of fifteen months spent in the armed services during World War I, until his retirement a few years ago because of illness.

Surviving are his wife, two sons, six daughters, thirteen grandchildren and two great grandchildren.

HENRY O. HAGEN

Dr. Henry O. Hagen, who practiced medicine for many years at New Richland, died August 31, 1953, in a St. Peter hospital. He was seventy-seven years old.

Dr. Hagen was born at New Richland and was graduated from St. Olaf College at Northfield and Rush Medical College in Chicago. With the exception of a year spent as captain in the Army Medical Corps during World War I, he practiced medicine in New Richland until his health failed in 1934.

He held membership in the American Medical Association, the Minnesota State Medical Association and the Waseca County Medical Society until the time of his retirement. He was also a member of the Masonic Lodge and of the American Legion.

He is survived by his wife, two sons, L. Winston and Calvin Rodney Hagen, both of Minneapolis, and a daughter, Mrs. P. C. Krupp, of Chicago, and two grandchildren.

ALBERT CONRAD LUNDGREN

Dr. Albert Conrad Lundgren, of Minneapolis, died at Las Vegas, Nevada, September 26, 1953, on the way home from a California vacation.

Dr. Lundgren was sixty-two years old. He was born in Minneapolis and practiced medicine there for thirty-five years. He received his degree in medicine from Marquette University in 1909, spent two years in post-graduate work at the Surgical Institute in Chicago and served his internship at Swedish Hospital in Minneapolis. He practiced for a short time at Nelson, Wisconsin, and then moved back to Minneapolis. His daughter, the former Dr. Olive A. Lundgren, was graduated from the University of Minnesota Medical School and subsequently married Dr. J. Gordon Bateman, now of Long Beach, California.

Dr. Lundgren was a member of the American Medical Association, the Minnesota State Medical Association and the Hennepin County Medical Society. He was also a member of the Arcana Masonic Lodge, Anchor chapter, Darius Commandery and Zuhrah Temple of the Shrine.

He is survived by his wife and daughter, two sisters, Margaret Lundgren of Minneapolis and Mrs. William Peterson of Long Beach, California, and a brother, Alfred, of Los Angeles, California.

JOHN BANKS ROBERTSON

Dr. John Banks Robertson, a pioneer physician who practiced medicine for more than forty years in Cottonwood, died at the age of eighty-six on September 22, 1953, in Minneapolis. Dr. Robertson was the first practicing physician in Cottonwood and it was his proud boast that he had delivered 3,400 babies in a period of forty-two years and lost only one mother. After his retirement, he moved to Minneapolis in 1935 and continued, in spite of disability, to assist from time to time in the practice of his son, Dr. Murl John Robertson, now a medical officer with the Veterans Administration at Clinton, Iowa.

Dr. Robertson was born at London, Minnesota, in 1866. He was left an orphan at the age of six and his life was one of struggle and hardship. He secured an education in spite of difficulties, however, and was graduated from Rush Medical College in 1892 after attending both Carleton College and the University of Minnesota. He was licensed to practice in Minnesota in 1893 and went directly to Cottonwood. During nearly half a century of practice there, he served his community as mayor, councilman and member of the board of education. He served for thirteen years as Lyon County coroner and he was also an elder of the Cottonwood Presbyterian Church, having conducted Sunday school classes in the depot before his church was built.

At the outbreak of World War I, Dr. Robertson entered the service, the first member of the Lyon-Lincoln Medical Society to enlist, and served as captain in the Medical Corps until 1919. After that, he returned to his practice in Cottonwood and remained there until illness forced him to retire in 1936.

Dr. Robertson was a member of the American Medical Association, the Minnesota State Medical Association and of the Lyon-Lincoln County Medical Society. He also belonged to the Masonic order Scottish Rite, Zuhrah Shrine Temple and the American Legion.

He is survived by a daughter, Mrs. J. L. Anderson of Marshall, and three sons, L. J. Robertson of Elmwood, Illinois; Glen W. Robertson of Minneapolis, and Dr. Murl Robertson.

According to news reports, a Communist cell was discovered in the Iranian-American Health Service at Tehran. The organization, "Health Co-operative," is operated jointly by the U. S. Point Four Technical Assistance Fund and the Iranian Health Ministry. It employs about fifty Americans and several hundred Iranians.

STOP . . .

BEFORE YOU BUY YOUR NEW CAR— SEE US . . .

we can save you money on the finance charge.

©

AMERICAN NATIONAL BANK OF SAINT PAUL

Bremer Arcade Robert at 7th CE 6666

Member Federal Deposit Insurance Corporation

The Birches Sanitarium, Inc.

2391 Woodland Avenue
Duluth 3, Minnesota

A hospital for the care and treatment of Nervous and Mental disorders. Quiet, cheerful environment. Specially trained personnel. Recreational and occupational therapy.

Dr. L. R. Gowan, M.D., M.S., Medical Director

Of General Interest

Dr. John Schut, who has been associated with the staff of the Anoka State Hospital, was married to Mary Ann Reisdorfer, August 25, in Robbinsdale. Dr. and Mrs. Schut live in Galesburg, Illinois, where Dr. Schut is associated with Dr. Harold Himwich in the study of brain metabolism.

* * *

Dr. Milton Kaiser, of New Ulm, was the speaker at the opening series of Parenthood Classes which began September 28, at the Union Hospital in New Ulm. The classes have been planned as part of the maternal and child health programs of Brown County under the direction of Ruth Johnson, County Health Nurse.

* * *

Dr. Henry Hutchinson, superintendent of the Moose Lake State Hospital and the mayor of Moose Lake, gave the welcoming speech at the fourteenth annual meeting of the Minnesota Welfare Conference, Region I, held at the Moose Lake State Hospital, September 24. Included on the speakers program for the morning session was **Dr. John E. Haavik,** Duluth psychiatrist. **Dr. K. W. Douglas,** superintendent of the Sandstone State Hospital, spoke in the afternoon on "Minnesota Plan for the Treatment of Alcoholism."

* * *

Dr. L. W. Johnsrud, of Hibbing, has been named Medical Division chairman of the Hibbing General Hospital Expansion fund.

* * *

Dr. R. E. Barnes, who recently completed his internship at Santa Clara County Hospital, San Jose, California, began practice in Aurora, in late September.

* * *

Dr. Louis C. Jensen, chief of physical medicine at the Minneapolis Veterans Hospital, retired September 30, after thirty-two years and seven months in federal medical service. Dr. Jensen has served in three different administrative agencies—the United States Public Health Service, Veterans Bureau and Veterans Administration, all of them allowing him to continue living in Minneapolis.

* * *

Dr. Benjamin M. Fuller, recently released from a tour of active duty as a medical officer at Scott Air Force Base, Illinois, has resumed his practice in Saint Paul.

* * *

Dr. George N. Kraemer, of Mankato, opened a part-time office in Nicollet, September 22, using the office space formerly occupied by **Dr. M. H. Larson.** Dr. Kraemer completed a three-year residency in surgery at Minneapolis General Hospital before beginning practice in Mankato in 1953.

Dr. Harold Elliott, formerly of New York, began medical practice in Hayfield, October 1. Dr. Elliott recently spent seven years in Bimbur, Nigeria, Africa, where he supervised the erection of a hospital for the Evangelical United Brethren.

* * *

Two new physicians recently joining the staff of the Anoka State Hospital are **Dr. G. H. Adkins** and **Dr. H. L. Terry.** Dr. Adkins has been associated with the Faribault State School and, more recently, with the Sandstone State Hospital. Dr. Terry has been with the State Hospital at Pueblo, Colorado, and later with the Pueblo Nervous and Mental Hygiene Clinic, at Pueblo, which he closed when he came to Anoka.

* * *

Dr. S. A. Whitson, of Albert Lea, was elected first president of the Minnesota Public Health Association, and **Dr. Stewart Thomson,** University of Minnesota, treasurer, at the group's annual conference held at the Nicollet Hotel, Minneapolis, September 25. **Dr. W. W. Rieke,** Wayzata, was among those named to the executive committee.

* * *

Dr. Maurice Meller, originally from Poland, joined the Brainerd Clinic, in September, where he will practice internal medicine. Dr. Meller was graduated from the Royal University of Medicine and Surgery, Prama, Italy, and practiced in Prama and in the International Settlement in Shanghai, China, for nine years before coming to the United States in 1948. Since coming to the United States, Dr. Meller has done postgraduate work in the French Hospital in San Francisco, California, and at the Eitel and Abbott Hospitals, in Minneapolis.

* * *

Federal funds, which represent 54 per cent of the income of the Minnesota State Health Department, have been reduced by some $166,000, making retrenchment measures necessary. **Dr. A. J. Chesley,** State Health Officer, said that along with the reduction in staff, the venereal disease and tuberculosis control programs will be markedly curtailed.

* * *

Dr. Joseph Brennan, staff member of the Duluth Clinic, Duluth, spoke at a noon luncheon meeting of the Duluth Kiwanis, September 9. Dr. Brennan, who was born on the Island of Malta, spoke on his experiences in the British Navy in which he served during World War II. He was a prisoner of both the Germans and Italians but escaped to work with the underground in Italy.

* * *

Dr. Robert E. Hansen, of the Adams Clinic at Hibbing, presented a paper at the staff meeting of the Mayo Clinic, Rochester, September 9. Dr. Hansen

Will you have any tax-exempt income in 1953?

TAXABLE INVESTMENT INCOME is your most expensive income since, under our progressive income tax system, it is this *"Top Layer"* income that pays the heaviest taxes.

There is little a taxpayer can do about his taxable income received from:

Professional Income
Salaries
Business Profits
Dividends from Business

These are main sources of revenues—your basic income. *"Top Layer"* income, however, your investment income, is something that you definitely have control over in that it is within your power to give such income either a "taxable" or a "tax-free" status.

The income from investments which is subject to taxation actually shrinks whenever your professional income increases and forces this taxable *"Top Layer"* income into a higher bracket. In other words, the more your active earning power is increased, the greater percentage of your taxable investment income will be paid out in taxes.

Interest income on Municipal Bonds is exempt from all present Federal Income Taxes and consequently provides a *"Top Layer"* income that remains constant regardless of changes in other income or tax rates.

The two following examples clearly demonstrate the effect of Federal Income taxes on *"Top Layer"* income:

If you are in the $12,000-$14,000 individual income tax bracket and purchase an investment to yield 4.50% you will realize about 2.35% if the income is taxable but will receive the full 4.50% if it is not taxable.

If you are in the $20,000-$22,000 individual income tax bracket and purchase an investment to yield 4.50% you will realize about 1.70% if the income is taxable but will receive the full 4.50% if it is not taxable.

We shall be pleased to send you information and descriptive circulars pertaining to Municipal Bonds.

JURAN & MOODY, INC.
MUNICIPAL SECURITIES EXCLUSIVELY

TELEPHONES
Garfield 9661
Prior 6423

GROUND FLOOR
93 E. Sixth Street
St. Paul 1, Minnesota

HELP FOR PROBLEM DRINKERS

Hazelden Foundation (non-profit) is dedicated to the treatment of problem drinking through research, education, and rehabilitation. It has ideal facilities on Lake Chisago near Center City, Minn. Your inspection is invited at any time.

HAZELDEN FOUNDATION

Let us send you complete information

A NON-PROFIT ORGANIZATION

2639 University Avenue
24-hour service

St. Paul 14, Minnesota
Phone NEstor 5958

Cook County Graduate School of Medicine

POSTGRADUATE COURSES

SURGERY—Intensive Course in Surgical Technic, two weeks, starting November 9, December 7, 1953, January 18, 1954

Surgical Technic, Surgical Anatomy and Clinical Surgery, four weeks, starting March 1, 1954

Surgical Anatomy and Clinical Surgery, two weeks, starting March 15, 1954

General Surgery, two weeks, starting April 26, 1954

Surgery of Colon and Rectum, one week, starting March 1, 1954

Fractures and Traumatic Surgery, two weeks, starting March 1, 1954

GYNECOLOGY—Intensive Course, two weeks, starting February 15, 1954

Vaginal Approach to Pelvic Surgery, one week, starting March 1, 1954

OBSTETRICS—Intensive Course, two weeks, starting November 2, 1953, March 1, 1954

MEDICINE—Electrocardiography and Heart Disease, two weeks, starting March 15, 1954

Two-Week Intensive Course starting May 3, 1954
Gastroscopy, two weeks, starting March 8, 1954

DIAGNOSTIC X-RAY—Clinical course every week by appointment

CYSTOSCOPY—Ten-day practical course starting every two weeks

TEACHING FACULTY—ATTENDING STAFF OF COOK COUNTY HOSPITAL

ADDRESS: REGISTRAR, 707 South Wood Street, Chicago 12, Illinois

recently rejoined the Adams Clinic staff after a two-year fellowship at the Mayo Clinic. At the staff meeting he presented a paper on "The Effect of Heparin and Intermittent Claudication Which Results from Arteriosclerosis."

* * *

At the request of **Dr. H. Kleinman**, senior physician at the Red Lake Indian Hospital, Dr. Elaine Updyke, head of the streptococcus laboratory of the Federal Communicable Disease Center at Atlanta, Georgia, and Dr. Ceci Reinstein, an epidemiologist, also from the Center, spent some time in September doing research on the large number of cases of nephritis occurring among reservation children. **Dr. A. J. Chesley**, Minnesota State Health officer, accompanied them to Red Lake.

* * *

An American Cancer Society grant of $75,000 to the University of Minnesota for cancer research was announced by **Dr. C. G. Uhley**, of Crookston, president of the Minnesota division of the American Cancer Society, in September. This is the largest institutional grant ever made to the University by the society.

Among the physicians doing research work on group projects are:

Dr. Maurice B. Visscher—the chemistry of cancer and the role of sulfhydryl compounds;

Dr. Roy G. Holly and **Dr. John L. McKelvey**—radium treatment of cancer of the uterus;

Dr. Bernard Zimmerman and **Dr. Claude R. Hitchcock**—statistical studies in the tumor clinic and follow-up of patients;

Dr. James R. Dawson—human cancer studies with newly developed methods;

Dr. W. D. Armstrong—hormones in human and animal cancer;

Dr. Charles M. Nice, Jr.—irradiation treatment of lymphoid tumors;

Dr. Leo G. Rigler and **Dr. Richard L. Varco**—methods of early diagnosis of lung cancer;

Dr. Robert A. Ledner and **Dr. Donn G. Mosser**—x-ray effects on tumor-bearing tissues;

Dr. Owen H. Wangensteen, Dr. William D. Kelly, and **Dr. Edwin L. Brackney**—search for an intravenious dye as a cancer detection agent and technical problems in gastric and esophageal cancer surgery;

Dr. Claude R. Hitchcock—study of dietary production of anemia and pre-cancerous conditions in swine;

Dr. Bernard Zimmerman and **Dr. Claude R. Hitchcock**—clinical, endocrine and metabolic studies relating to cancer surgery and surgical removal of adrenal glands;

Dr. Claude Hitchcock—a study of effects of gasoline engine exhaust fumes and fumes from heated tar on incidence of lung cancer in mice;

Dr. Byrl J. Kennedy—treatment of breast cancer with hormones and radiation.

ANNOUNCING

The Seventeenth Annual Meeting

of

THE NEW ORLEANS GRADUATE MEDICAL ASSEMBLY

Conference Headquarters — Municipal Auditorium

MARCH 8-11, 1954

GUEST SPEAKERS

Perry P. Volpitto, M.D., Augusta, Ga.—Anesthesiology
Earl D. Osborne, M.D., Buffalo, N. Y.—Dermatology
Julian M. Ruffin, M.D., Durham, N. C.—Gastroenterology
Allan C. Barnes, M.D., Cleveland, Ohio—Gynecology
Walter C. Alvarez, M.D., Chicago, Ill.—Medicine
William D. Stroud, M.D., Philadelphia, Pa.—Medicine
Lawrence C. Kolb, M.D., Rochester, Minn.—Neuropsychiatry
Nicholson J. Eastman, M.D., Baltimore, Md.—Obstetrics
A. D. Ruedemann, M.D., Detroit, Mich.—Ophthalmology
Oscar L. Miller, M.D., Charlotte, N. C.—Orthopedic Surgery
Francis L. Lederer, M.D., Chicago, Ill.—Otolaryngology
Emmerich von Haam, M.D., Columbus, Ohio—Pathology
Philip M. Stimson, M.D., New York, N. Y.—Pediatrics
Ira H. Lockwood, M.D., Kansas City, Mo.—Radiology
Brian Blades, M.D., Washington, D. C.—Surgery
Samuel F. Marshall, M.D., Boston, Mass., Surgery
Orvar Swenson, M.D., Boston, Mass.—Surgery
Charles D. Creevy, M.D., Minneapolis, Minn.—Urology

Lectures, symposia, clinicopathologic conferences, round-table luncheons, three-dimensional surgical motion pictures, medical motion pictures and technical exhibits.

(All-inclusive registration fee—$20.00)

THE POSTCLINICAL TOUR TO HAWAII BY PLANE AND SHIP—MARCH 14-APRIL 6

For information concerning the Assembly meeting and the tour write Secretary, Room 103, 1430 Tulane Ave., New Orleans 12, La.

Dr. J. M. Hermanson, of Valley Springs, South Dakota, left his practice there to accept a residency in obstetrics and gynecology at Northwestern Hospital in Minneapolis.

* * *

Dr. J. Allen Wilson, Saint Paul, was the first speaker on the University of Minnesota Extension service seminar on "Gastroenterology," which began September 22, in New Ulm. Dr. Wilson's topic was "Diagnosis and Management of Upper Gastrointestinal Disorders."

* * *

Dr. L. J. Thill, recently separated from military service, became associated in practice with **Dr. M. B. Dahle,** of Olivia. Dr. Thill, a graduate of Marquette University, Milwaukee, Wisconsin, interned at St. Joseph's Hospital, Saint Paul, and had practiced in Indiana.

* * *

Dr. A. J. Olson, of Owatonna, spoke on the doctor's attitude on caring for polio patients in the home at the Public Health In-Service Education meeting on "Care of the Polio Patients in the Home," held at the recreation center in Owatonna, September 15.

* * *

Dr. Robert Barr and **Dr. Helen Knudsen,** of the State Health Department, inspected the new Union Hospital in New Ulm, September 9.

Dr. Tague Chisholm, Minneapolis, spoke on causes of childhood accidents, September 25, to the persons attending the Minnesota Public Health Conference at the Nicollet Hotel in Minneapolis.

* * *

Dr. Gordon E. Lee and **Dr. Robert Letson** joined the Elsey Clinic in Glenwood, in October. Both physicians are graduates of the University of Minnesota Medical School. Dr. Lee spent his early years at Fergus Falls, where his father practiced medicine for many years, and Dr. Letson lived in Alexandria most of his adolescent years, so both are natives of the area.

* * *

Dr. Charles M. Jessico, Duluth neurologist and psychiatrist, gave the concluding speech at the twelfth annual Faculty Institute held at the College of St. Scholastica, Duluth, September 10 and 11. Dr. Jessico's topic was "Mental Hygiene for Educators."

* * *

Dr. Joseph M. Ryan, chief of medicine and chairman of the isotope committee at St. Joseph's Hospital, Saint Paul, and **Dr. Elmer C. Paulson,** Worthington, attended a two-week session held in Oak Ridge, Tennessee, in September, devoted to studying the techniques of using radioisotopes in medicine.

* * *

Dr. H. L. Stemsrud, of Alexandria, was named head of the medical advisory committee of the Douglas County Chapter of the National Association for Infantile Paralysis, at the annual meeting held at the Garden Center, Alexandria, September 17.

* * *

Dr. C. L. Sherman, of Luverne, was the guest of honor at a reception given by the Luverne Chamber of Commerce, September 24. The evening, designated as "Dr. Sherman Night," commemorated the physician's fiftieth anniversary of coming to Luverne to practice medicine. The program included a talk by **Dr. E. Mendelssohn Jones,** secretary of the State Medical Board.

The following resolution was passed by the Southwestern Minnesota Medical Society in recognition of Dr. Sherman's service in the medical profession and community:

Whereas Dr. Charles L. Sherman has completed fifty years of outstanding service to his community, and

Whereas he has been for over fifty years an esteemed member of the Southwestern Minnesota Medical Society, during which period he has served one term as President, and

Whereas he has performed invaluable service as a member of the Minnesota State Board of Medical Examiners since 1927 to the present, and

Whereas he has served for thirty-nine years as President of the Board of Commissioners of Southwestern Minnesota Sanatorium, and

Whereas throughout these many years of distinguished and faithful service he has won the esteem and affection of the citizens in his community, as well as his colleagues in the practice of medicine,

Now therefore be it resolved that the Southwestern Minnesota Medical Society express to him their highest praises and deepest appreciation for the service he has rendered to humanity and his uplifting of the profession of medicine in his community and state, and

Be it further resolved that a copy of this resolution be given to Dr. Sherman and also that a copy of it be spread upon the records of the Society.

Resolutions Committee
C. A. Williams, M.D.
C. R. Stanley, M.D.
B. M. Stevenson, M.D.

O. M. Heiberg, M.D., Secretary
Southwestern Minnesota Medical Society
Dated at Worthington, Minnesota
This 21st day of September, 1953

* * *

Dr. I. L. Oliver and **Dr. T. H. Herder,** of Graceville, were among those from the community who accompanied Mother Herma and Sister Bernadette of the Holy Trinity Hospital, Graceville, to Norfolk, Nebraska, to confer with the Mother Prioress Consulata at Norfolk concerning permission for the local Sisters to continue operation of the Holy Trinity Hospital. The hospital is facing closure because of lack of finances and personnel.

* * *

Dr. H. C. Goss and **Dr. Arthur Neumaier,** both of the Glencoe Clinic, Glencoe, left October 1. Dr. Goss went to Tucson, Arizona, where he joined the staff of the Tucson Clinic. Dr. Neumaier took a year's leave of absence to accept a residency in Inter-

THE SHELTERING ARMS
4330 River Road, Minneapolis 6, Minnesota
A HOSPITAL FOR TREATMENT OF POLIOMYELITIS
Acute and Convalescent
Fully Approved by American College of Surgeons
Modern treatment—Staff includes Kenny trained technicians

North Shore Health Resort
Winnetka, Illinois
on the Shores of Lake Michigan

A completely equipped sanitarium for the care of nervous and mental disorders, alcoholism and drug addiction offering all forms of treatment, including electric shock.

SAMUEL LIEBMAN, M.S., M.D.
225 Sheridan Road Medical Director Phone Winnetka 6-0211

nal medicine at the Veterans Hospital, Minneapolis. **Dr. C. W. Truesdale** will conduct the Glencoe Clinic alone until he can find an associate.

* * *

Dr. H. R. Basinger, of Mountain Lake, was received as a member in the International College of Surgeons, September 17, at Carnegie Hall, New York, New York.

* * *

Dr. R. W. Gifford, of the Mayo Clinic, participated in a symposium on hypotensive drugs sponsored by the Massachusetts General Hospital in Boston, September 14 and 15.

* * *

Dr. Nelson Bradley, superintendent of the Willmar State Hospital, was granted a leave of absence, beginning October 1, to take advanced studies in the field of neuropsychiatry at Pittsburgh University. **Dr. Kenneth Douglas,** of the Standstone State Hospital, was named acting superintendent of the Willmar State Hospital, during Dr. Bradley's absence. He will continue to act as superintendent of the Sandstone Hospital also.

* * *

Dr. Raymond Boyce, who recently completed a residency at St. Mary's Hospital, Minneapolis, left for Rapid City, South Dakota, in September, to begin the practice of medicine.

* * *

Dr. William C. Bernstein, of Saint Paul, was elected president of the Southern Minnesota Medical Association, at the association's annual meeting, held September 14, in Mankato. **Dr. D. P. Anderson,** of Austin, was elected vice president, and **Dr. Charles Stroebel,** of Rochester, secretary-treasurer. Winona was selected for the 1954 meeting.

* * *

Four Minnesota physicians who were guest speakers at the eighty-eighth annual meeting of the Michigan State Medical Society, held in Grand Rapids the week of September 19, were: **Dr. Leo G. Rigler,** radiology department chief, University of Minnesota; **Dr. J. A. Bergen,** gastroenterology department chief, Mayo Clinic, and professor of medicine at the Mayo Foundation; **Dr. Norman M. Keith,** professor emeritus of medicine at the University of Minnesota and consultant emeritus in medicine at the Mayo Clinic; **Dr. William L. Benedict,** professor emeritus of ophthalmology at the Mayo Foundation.

* * *

A bronze plaque honoring the memory of **Dr. Alfred W. Adson,** pioneer in neurosurgery in the midwest, was unveiled in the operating room suite of St. Mary's Hospital, Rochester, September 9. **Dr. Winchell McK. Craig,** of the Mayo Clinic, dedicated the plaque to the memory of Dr. Adson, who died in 1951. Other plaques in St. Mary's commemorating physicians are those of **Dr. Robert D. Mussey,** founder of the fifth floor section of the obstetric service, and **Dr. Melvin S. Henderson,** for his pioneer work in orthopedics.

Dr. J. Y. Feinstein, of Minneapolis, was among the guest speakers at the fourth annual convention of the American Association of Nursing Homes, held in Minneapolis, the week of September 2.

* * *

Dr. Henry Hutchinson, superintendent of the State Hospital at Moose Lake, addressed the Eveleth school teachers at an opening day workshop, September 8.

* * *

Dr. J. R. McDonald, of Rochester, spoke at the regular meeting of the Rochester Odd Fellows Lodge.

* * *

Dr. J. Grafton Love and **Dr. G. J. Thompson,** of the Mayo Clinic, presented papers at the meeting of the International College of Surgeons, held in New York, the week of September 14.

* * *

Dr. C. W. Truesdale, of Glencoe, was named County Coroner by the board of commissioners, September 10. He replaces **Dr. H. C. Goss,** who recently moved to Tucson, Arizona.

* * *

Dr. William Kosiak, chief of staff at the Community Health Center, Two Harbors, was a guest speaker at the annual convention of the CIO, held in Saint Paul, September 18.

* * *

Dr. Walter Valentine, of Tracy, presented a paper on the nursing situation in Minnesota, at the meeting of the Southern Minnesota Medical Association, held in Mankato, September 14.

* * *

Dr. I. G. Wiltrout, of Oslo, recently was presented with a new automobile by the Oslo American Legion Post, in recognition of his services to the community.

* * *

Dr. Phillip R. Beckjord, a former physician of Willmar, has been assigned to the faculty of the Army Medical Service Graduate School at the Walter Reed Army Medical Center, Washington, D. C.

* * *

Fire, apparently caused by defective wiring, damaged one wing of the Red Lake Indian Hospital, September 3. All patients were safely evacuated to surrounding homes. **Dr. Herman Kleinman** and **Dr. Samuel Silverman** are the physicians in charge of the hospital.

* * *

Dr. James T. Priestly, of the Mayo Clinic, participated in the joint meeting of the Rocky Mountain Medical Conference and the Utah State Medical Association, held in Salt Lake City, the week of September 8. Dr. Priestly served as a member of a panel discussion and gave two talks—"Surgical Lesions of the Adrenal Glands" and "Carcinoma of the Stomach."

* * *

Members of the administrative and professional staffs of twenty state institutions met at Rochester, September 10, to discuss current therapy and facili-

USE

Q-Test

The One Hour Pregnancy Diagnosis

BROWN & DAY, INC.

St. Paul 1, Minn.

VALLEYVIEW
Hospital and Sanitarium
Jordan, Minnesota
PHONE 254

Located conveniently 22 miles southwest of 50th Street and France Ave. So., Edina, on state highway 169.

Offers unique advantages for the longer term care of non-acute illnesses affecting people of all age groups.

Twin Cities Phone
Bridgeport 2119

ties. **Dr. Magnus Petersen,** Rochester State Hospital superintendent, **Dr. Henry Dodge, Jr.,** and **Dr. Reginald Bickford,** of the Mayo Clinic, and **Dr. C. W. Sem-Jacobson** and **Dr. Jorge A. Lazarte,** of the Rochester State Hospital staff, reported on intracerebral electography. **Dr. Adelaide M. Johnson,** Mayo Clinic psychiatrist, spoke on "The Family and Its Attitudes."

* * *

Dr. M. W. Dobson, who recently completed a residency in surgery at the General Hospital of the University of Alberta at Edmonton, Canada, joined **Dr. R. G. Hassett** and **Dr. Joseph Von Drasek** in their practice in Mankato, in September.

* * *

Dr. Richard Allison DeWall, who recently completed his internship at the United States Public Health Service Hospital, Staten Island, New York, joined the Mork Clinic at Anoka, September 1.

* * *

The Journal of the American Medical Women's Association paid tribute, in a recent issue, to **Dr. Nellie O. N. Barsness,** of Saint Paul. Dr. Barsness, one of the first women physicians in Minnesota, has practiced medicine for over fifty years.

* * *

Dr. G. Charles Wilcox, formerly in practice with **Dr. C. S. Strathern,** in St. Peter, moved to Wood Lake, October 1, to begin practice in a new clinic building constructed by the people in the town and surrounding community.

* * *

Dr. Jack F. Haas, who recently completed his internship at Ancker Hospital, Saint Paul, became associated with **Dr. Glenn E. Nelson** at the Fairfax Clinic, Fairfax, August 1.

* * *

Dr. L. O. Underdahl, of the Mayo Clinic, addressed the members of the Ontario Medical Association at their district meeting held at Fort William and Port Arthur, Ontario, the week of September 8. Dr. Underdahl's subject was "Myxedema as Compared With Low Basal Metabolic Rate Without Myxedema." He also participated in several clinics and clinico pathologic conferences.

* * *

Dr. Martin Nordland, of Minneapolis, was recently named to the Board of the First Robbinsdale State Bank.

* * *

Dr. L. W. Morsman, of Hibbing, reported on plans for the million dollar hospital expansion campaign at Hibbing, at a meeting of the Chamber of Commerce, held August 25.

* * *

Dr. Aylmer Foster-Carter, medical superintendent of the Brompton Hospital Sanatorium, London, England, was a guest on the Doctor's Roundtable over

WCCO-TV, Sunday, September 13, with Dr. E. A. Boyden, professor of anatomy, and **Dr. J. Arthur Myers**, professor of preventive medicine, at the University of Minnesota.

* * *

Plans are being made to expand facilities at Children's Hospital, Saint Paul, following the recommendations summarized in a report to the institution's board of trustees from **Dr. Guy W. Brugler**, administrator of Boston Children's Medical Center. Dr. Brugler made a survey of the hospital and its facilities last summer.

* * *

Among the "newsmakers of the future" in the Minneapolis community were **Dr. Robert A. Good**, associate professor of pediatrics; **Dr. C. Walton Lillehei**, associate professor of surgery, and **Dr. Lewis Thomas**, professor of pediatrics, all of the University of Minnesota. The three physicians were included in a group of 100 men between the ages of twenty-five and forty selected by a committee of "senior citizens" as representatives of future leadership. The project was sponsored by the Minneapolis Chamber of Commerce and *Time Magazine*.

* * *

Capt. Alexander Boysen (MC), formerly of Pelican Rapids, was among the prisoners of war recently released and returned from Korea.

* * *

Dr. Owen H. Wangensteen, chief of surgery at the University of Minnesota, spoke on the proposed cancer research clinical institute, at a fund-raising campaign meeting of leaders of Veterans of Foreign War groups, held in Coffman Memorial Union, University of Minnesota, September 20. The proposed building will include eleven beds, five chemical laboratories, one pathology laboratory, one radioisotope laboratory, three animal laboratories, a diet kitchen, staff library, and conference rooms.

On October 4, Dr. Wangensteen was one of four Fellows of the American College of Surgeons participating in a radio panel discussion of "What's Next in Surgery?" broadcast from Chicago, during the thirty-ninth clinical congress of the American College of Surgeons.

* * *

Dr. C. B. Will, of Bertha, attended a Public Relations Convention held in Chicago, September 2 and 3.

* * *

Dr. L. H. Blattspieler, recently of Lincoln, Nebraska, joined the staff of the Worthington Clinic as radiologist in September, succeeding **Dr. Elmer Paulson.** Dr. Blattspieler was graduated from the Nebraska College of Medicine where he also did graduate work in radiology.

* * *

Dr. Arvid J. Houglum, recently released from active duty with the Air Force where he was serving in Japan and Korea, joined **Dr. A. S. Midthune** in his practice in Lake Park, in October. Dr. Houglum is a graduate of the University of Minnesota Medical School and completed his internship at Denver General Hospital, Denver, Colorado. During World War II, from 1943 to 1946, Dr. Houglum served with the Air Corps in the South Pacific.

* * *

Dr. Otto C. Phares, of St. Cloud, was guest speaker before the joint meeting of the Wright County Medical Society and the staff of the Buffalo Memorial Hospital, held October 6, in Buffalo. Dr. Phares' topic was "Common Urinary Tract Infections and Their Treatment."

* * *

Dr. Dean J. Hempel, who recently completed his internship at Minneapolis General Hospital, joined **Dr. Harold W. Hermann**, of Minneapolis, in the practice of pediatrics.

* * *

Dr. S. W. Lipinski, a graduate of the Northwestern University School of Medicine, upon completing a year's residency in surgery at the University of Minnesota, has become associated with the Mesaba Clinic, Hibbing, where he will engage in surgery and general practice.

* * *

Dr. Bayard T. French, a graduate of the University of Iowa School of Medicine, upon completion of his internship at the St. Luke's Hospital, Duluth, has

RADIUM & RADIUM D+E
(Including Radium Applicators)
FOR ALL MEDICAL PURPOSES
Est. 1919
Quincy X-Ray and Radium Laboratories
(Owned and Directed by a Physician-Radiologist)
Harold Swanberg, B.S., M.D., Director
W.C.U. Bldg. Quincy, Illinois

Ulmer
PHARMACAL COMPANY
1400 Harmon Place
Minneapolis 3, Minnesota

Manufacturers of
Ethical Pharmaceutical Specialties
Not Advertised to the Laity

entered general practice in Chisholm, in association with the Adams Clinic.

* * *

Dr. Robert E. Hansen has joined the Adams Clinic, Hibbing, where his practice will be limited to internal medicine. He recently completed a fellowship in internal medicine at the Mayo Clinic in Rochester.

* * *

An article about the **one-hundredth annual meeting** of the Minnesota State Medical Association, the centennial issue (May, 1953) of Minnesota Medicine, and the centennial celebration of St. Joseph's Hospital, appeared in a recent issue of *Minnesota History,* published by the Minnesota Historical Society.

* * *

Dr. F. D. Bucher, formerly of Starbuck, is now serving with the United States Navy aboard the U.S.S. Olmsted. He writes that the U.S.S. Olmsted is named after Olmsted County in Minnesota.

* * *

Dr. James L. Benepe, of Saint Paul, has been chosen as delegate from his Alma Mater, Washington University of St. Louis, Missouri, to the inauguration of the new president of Hamline University, Paul H. Giddens, October 9, 1953.

* * *

The Committee on Tuberculosis of the State Medical Association, all members of committees on tuberculosis of local medical societies throughout the state, Governor C. Elmer Anderson and other interested persons were guests at a dinner meeting of the Minnesota Tuberculosis and Health Association, 614 Portland Avenue, Saint Paul, October 9. A plan for immediate action leading to the accreditation of the entire eighty-seven counties of Minnesota was drawn up at this meeting.

* * *

Dr. Owen H. Wangensteen, chief of the University of Minnesota's surgery department, has been selected to serve on the National Advisory Heart Council. Announcement of his appointment was made November 3 by Surgeon General Leonard A. Scheele of the United States Public Health Service.

As a member of the National Advisory Heart Council, Dr. Wangensteen will advise and make recommendations to the Surgeon General on programs on the National Heart Institute, established by Congress through the National Heart Act in 1948. This is one of the seven National Institutes of Health at Bethesda, Maryland, main research arm of the Public Health Service.

A fifteen-member group composed of outstanding leaders in medicine, science, education and public affairs, the Council was also established by the National Heart Act as official advisory body for the National Heart Institute. The Council reviews requests from non-federal institutions and individuals for research and teaching grants in the field of diseases of the heart and circulation. The group is the recommending authority for these grants which are awarded, from funds as appropriated by Con-

COOPER CREME
TRADE MARK
The original vaginal creme
ACCEPTED COUNCIL ON PHARMACY AND CHEMISTRY AMERICAN MEDICAL ASSOCIATION
FORMULA:
For
BETTER Birth Control
Since 1934
No Finer Name in Contraceptives...
A product of WHITTAKER LABORATORIES, Inc PEEKSKILL, N.Y.
Active Ingredients
Trioxymethylene 0.04%
Sodium Oleate 0.67%

SERVICE BROWN & DAY INC SAINT PAUL U.S.A. QUALITY

For

Professional Supplies

and

Service

BROWN & DAY, INC.

St. Paul 1, Minnesota

gress, by the Surgeon General after they have been recommended by the Council for approval.

In addition to appointed members of the National Advisory Heart Council, there are three ex-officio members representing the Public Health Service, Veterans Administration, and Department of Defense. The Council meets three times a year at the National Institutes of Health in Bethesda, Maryland, a suburb of Washington, D. C. Its next meeting is scheduled for November 19-21, 1953.

HOSPITAL NEWS

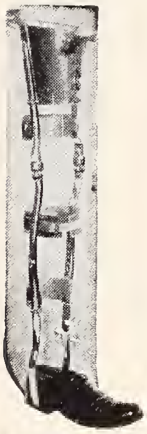
The **Chisholm Memorial Hospital**, a 30-bed, 12-bassinet new public supported institution, was dedicated on September 27, 1953, and will officially open in the latter part of October. This hospital will be operated by a Chisholm Memorial Hospital corporation. J. E. Janzen is administrator. P. H. MacFarlane, M.D., will be the first Chief of Staff.

* * *

A $1,000,000.00 expansion fund campaign to finance construction of a 100-bed addition to the **Hibbing General Hospital**, Hibbing, Minnesota, is under way. The major mining producers in the area have been asked to contribute $700,000. The balance of the goal is to be raised by public solicitation. When the new addition is completed, the hospital will be a 250-bed institution.

* * *

Dedication ceremonies for the new $1,800,000 addition to **St. John's Hospital**, Saint Paul, were held September 27. The new unit, along with a completely revamped and remodeled older portion, gives the institution 165 beds. Much new equipment has been purchased.



RELIABILITY!

For years we have maintained the highest standards of quality, expert workmanship and exacting conformity to professional specifications . . . a service appreciated by physicians and their patients.

ARTIFICIAL LIMBS, TRUSSES,
ORTHOPEDIC APPLIANCES,
SUPPORTERS, ELASTIC HOSIERY

Prompt, painstaking service

Buchstein-Medcalf Co.
223 So. 6th St. Minneapolis 2, Minn.

The principal dedication speech was given by the Reverend John Schumacher, of Buena Park, California, former member of the board of directors and long identified with the activities of the hospital. Others on the program included Dr. Robert N. Barr, Minnesota State Health Department; Dr. C. Kenneth Cook, chief of staff; Dr. F. J. Plondke, founder of St. John's; Miss Magdalena M. Rau, superintendent for forty-two years, now retiring, and Carl AveLallemont, the newly appointed administrator.

* * *

The Minneapolis Veterans Administration Hospital, 54th Street and 48th Avenue S., Minneapolis, opened its doors for public inspection of its new 480-bed building, August 30. The new eight-story building was constructed at a cost of $6,270,278. Dr. John A. Seaberg, hospital manager, said that plans are being made to renovate the older buildings in the hospital unit. When this is completed, a total of 1,019 beds will be available for treatment of disabled veterans of the Upper Midwest.

* * *

Dr. Rudolph Hultkrans, of Minneapolis, was elected president of the **Northwestern Hospital** medical staff, succeeding Dr. William Hanson. Dr. Harold Miller, Minneapolis, was elected vice president, and Dr. Robert Priest, Minneapolis, secretary-treasurer.

BLUE CROSS-BLUE SHIELD PLANS

Dual claims for surgical or medical care of the same illness or condition are the source of increasing payment problems and physician dissatisfaction. Although different clauses of the contract control many of the situations which arise, partial treatment of a condition by two different doctors, insufficient information for proper interpretation or evaluation of a claim and delayed filing of claims are responsible for many of the difficulties experienced.

Among the pertinent contract clauses, the one which provides that when two or more physicians render

HOMEWOOD HOSPITAL is one of the Northwest's outstanding hospitals for the treatment of Nervous Disorders—equipped with all the essentials for rendering high-grade service to patient and physician.

Operated in Connection with
Glenwood Hills Hospitals

HOMEWOOD HOSPITAL
Corner Penn and Plymouth Avenues North
Minneapolis Minnesota

medical service simultaneously, benefits shall be provided for the services of only one physician, is the most limiting. However, the clause pertaining to medical care during a surgical or obstetrical admission is almost as clear-cut in its limitations. This clause states that medical services are not generally available simultaneously with surgical or obstetrical services except in the event of serious medical complications. Under these circumstances, medical allowances may be paid if treated by a physician other than the surgeon or obstetrician, or, if treated by the surgeon or obstetrician, medical services are not payable during pre- or post-operative, or pre- or post-partum periods.

Other contract clauses clearly exclude payment for medical services before and after surgery, and also before and after obstetrical deliveries when such services are rendered by the surgeon or obstetrician, respectively. These clauses in many instances prevent the payment of services rendered before or after delivery or surgery by a doctor other than the obstetrician or surgeon if the medical services are for conditions related to pregnancy or the condition for which surgery is performed.

Though the restrictive phrase, "a bona fide and urgent need," in the contract clause pertaining to consultation has been presented before, the limiting portion of the definition of emergency medical care requires consideration. In this clause, emergency medical services are defined as medical services of an urgent nature rendered at a time when the life or health of the patient is in immediate and serious danger. According to this definition, claims for emergency medical care which involve night calls, severe pain or great distress of the patient but no serious threat to the patient's life are not eligible for the fees of emergency medical care.

With these controlling provisions of the contract, delayed filing of claims often leads to paying the wrong doctor because a claim for the same service has already been paid to another physician. In such instances it is often necessary, in order that the claim be paid properly, to ask for a refund from one doctor before payment can be sent the second one. Such actions often give rise to dissatisfaction which could easily be avoided if other physicians who render care listed on the Medical Service Report, or if both physicians would submit claims simultaneously.

Blue Shield's very purpose is to pay all claims as liberally as the contract and fee schedule will permit. Nevertheless some limitations and restrictions are necessary so that the premium may be kept at a competitively low level and within the reach of the greatest number of people. Since some limitations are necessary, their selection is based on the principle of providing the broadest scope of benefits for the greatest number of people, both subscribers and doctors. In this manner, with the support and help of the medical profession, it is felt that Blue Shield will evolve a free enterprise solution for the economics of modern medicine.

During the month of August, Blue Cross incurred claims totaling $1,161,296 and to date this year $9,830,154. Hospitalization expense to date this year was 94.6 per cent of the total payments made by subscribers.

Blue Cross celebrated its twentieth anniversary this

THE
MEDICAL PROTECTIVE
COMPANY
FORT WAYNE, INDIANA

PROFESSIONAL PROTECTION
EXCLUSIVELY
SINCE 1899

specialized service
assures *"know-how"*

MINNEAPOLIS Office:
Robert L. McFerran, Rep.,
2426 Clinton Ave. So., Apt. E-8,
Telephone Fillmore 1292

AT YOUR CONVENIENCE, DOCTOR . . .

you are cordially invited to visit our new and modern prescription pharmacy located on the street floor of the Foshay Tower, 100 South Ninth Street.

With our expanded facilities we will be able to increase and extend the service we have been privileged to perform for the medical profession over the past years.

Exclusive Prescription Pharmacy

Biologicals Pharmaceuticals Dressings
Surgical Instruments Rubber Sundries

JOSEPH E. DAHL CO.
(Two Locations)
100 South Ninth Street, LaSalle Medical Bldg.
ATlantic 5445 Minneapolis

DANIELSON MEDICAL ARTS PHARMACY, INC.

PHONES:
ATLANTIC 3317
ATLANTIC 3318

10-14 Arcade, Medical Arts Building
825 Nicollet Avenue—Two Entrances—78 South Ninth Street
MINNEAPOLIS

HOURS:
WEEK DAYS—8 to 7
SUN. AND HOL.—10 TO 1

year. Since Blue Cross began, over 85 million dollars in hospital service has been provided to subscribers and their dependents.

During the month of August, Blue Shield incurred claims totaling $321,248 and to date this year $2,887,996 or 80.1 per cent of the total payments made to subscribers.

Mr. Victor Anderson, member of the Blue Cross staff, and a representative from Blue Shield, will attend all hospital medical staff meetings to which they are invited during the next several months for the purpose of informing the medical profession of the progress, the utilization, incidence, and other matters of importance to medical economics in which the medical profession plays a very vital part.

In both the United States and Canada, accidents are the greatest single threat to the lives of children one to four years old. In these two countries, about 5,500 pre-school children die annually as a result of mishaps of one kind or another.—*Christmas Seal Health News Service.*

RADIUM RENTAL SERVICE
4340 CEDARWOOD ROAD
MINNEAPOLIS 5, MINNESOTA
TEL. ATLANTIC 5297

Radium element prepared in type of applicator requested

ORDER BY TELEPHONE OR MAIL
PRICES ON REQUEST

TUBERCULOSIS IN MINNESOTA

(Continued from Page 1166)

seniors of the county must be tested with tuberculin with no more than 10 per cent reacting.

Lincoln County was the first to qualify and was officially accredited on December 11, 1941. Lyon County was the twenty-fifth to qualify and was accredited on April 20, 1953.

Thirty-nine additional counties have now qualified from the standpoint of mortality rates. As soon as the physicians and co-workers in these thirty-nine counties test 90 per cent or more of the seniors in the high schools, they will be ready for accreditation, since there is little likelihood that more than 10 per cent in any county will react to tuberculin. Several of the remaining twenty-three counties in Minnesota apparently will soon be qualified for accreditation, and it now appears that the entire state can be accredited within less than five years.

Minnesota is the first state in the nation to have committees on tuberculosis in all of its medical societies and is the first area in the world to adopt the accreditation plan. Already this has proved to be one of the most productive projects ever introduced in Minnesota from the standpoint of combatting tuberculosis.—J. F. B.

Tuberculosis cases reported to the Minnesota Health Department in the fifteen years from 1938 to 1952 totaled 42,273.—*Christmas Seal Health News Service.*

PATTERSON SURGICAL SUPPLY COMPANY
130 W. Seventh Street, St. Paul 2, Minn.
HOSPITAL AND PHYSICIANS SUPPLIES AND EQUIPMENT
Cedar 1781-82-83

Insurance at a Saving
Druggists' Mutual Insurance Company
OF IOWA, ALGONA, IOWA
Fire - Tornado - Automobile Insurance
Prompt Loss Service
MINNESOTA REPRESENTATIVE—S. E. STRUBLE, WYOMING, MINN.

BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical Libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

MAY'S MANUAL OF THE DISEASES OF THE EYE. 21st Edition. Revised and edited by Charles A. Perera, M.D., Associate Clinical Professor, College of Physicians and Surgeons, Columbia University, New York; Attending Ophthalmologist, Presbyterian Hospital, New York. 512 pages. Illus. Price $6.00, cloth. Baltimore: Williams & Wilkins Co., 1953.

THE NURSING MOTHER. A Guide to Successful Breast Feeding. Frank Howard Richardson, M.D. Licentiate American Board of Pediatrics. F.A.C.P., F.A.A.P. 204 pages. Illus. Price $2.95, cloth. New York: Prentice-Hall, Inc., 1953.

A PRIMER ON CARDIOLOGY. Second Edition. George E. Burch, M.D., F.A.C.P. Henderson Professor of Medicine, Tulane University School of Medicine; Physician-in-Chief, Charity Hospital; Consultant in Cardiovascular Diseases, Ochsner Clinic; Visiting Physician, Touro Infirmary, New Orleans. 339 pages. Illus. Price $5.50, cloth. Philadelphia: Lea & Febiger, 1953.

SURGERY OF THE BILIARY TRACT, PANCREAS AND SPLEEN. Charles B. Puestow, M.D., Ph.D. (Surg.) Clinical Professor of Surgery, College of Medicine and Graduate College, University of Illinois; Attending Surgeon, University of Illinois Research and Educational Hospitals; Chief of Surgical Service, Veterans Administration Hospital, Hines, Illinois; Chief Surgeon, Henrotin Hospital, Chicago. 370 pages. Illus. Price $9.00, cloth. Chicago: Year Book Publishers, 1953.

RESPIRATORY DISEASES AND ALLERGY. Joseph S. Smul, M.D. Fellow of National Gastroenterology Association; Member of New York Academy of Sciences; Formerly Vice President of Manhattan Roentgen Ray Society; Associate Gestroenterologist Beth David Hospital. 80 pages. Illus. Price $2.75, cloth. New York: Medical Library Co., 1953.

ANATOMY AND SURGERY OF HERNIA. Leo M. Zimmerman, M.D. Professor of Surgery and Co-chairman of the Department of Surgery, Chicago Medical School; Attending Surgeon, Michael Reese, Cook County and Chicago Memorial Hospitals; and Barry J. Anson, Ph.D. (Med.Sc.). Professor of Anatomy, Northwestern University Medical School; member of Attending Staff, Passavant Memorial Hospital. 374 pages. Illus. Price $10.00, cloth. Baltimore: Williams & Wilkins Co., 1953.

FILMS IN PSYCHIATRY, PSYCHOLOGY and MENTAL HEALTH. Adolf Nichtenhauser, M.D., Marie L. Coleman and David S. Ruhe, M.D., 269 pages. Illus. Price $6.00, cloth. New York: Health Education Council, 1953.

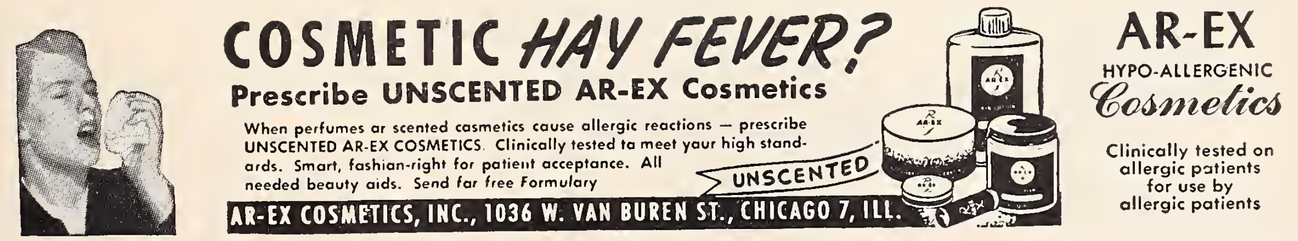
HEREDITARY HEMORRHAGIC TELANGIECTASIS

(Continued from Page 1156)

References

1. Armentrout, H. L., and Underwood, F. J.: Familial hemorrhagic telangiectasia with associated pulmonary arteriovenous aneurysm. Am. J. Med., 8:246-254, 1950.
2. Babington, B. G.: Hereditary epistaxis. Lancet, 2:362-363, 1865.
3. Barrock, J. J.: Hereditary hemorrhagic telangiectasia; report of case with review of literature. Wisconsin M. J.. 43:805-814, 1944.
4. Brink, A. J.: Telangiectasis of lungs; with 2 case reports of hereditary hemorrhagic telangiectasia with cyanosis. Quart. J. Med., 19:239-248, 1950.
5. Fitz-Hugh, T.: The importance of atavism in the diagnosis of hereditary hemorrhagic telangiectasia. Am. J. M. Sc., 166:884, 1923.
6. Fitz-Hugh, T.: Splenomegaly and hepatic enlargement in hereditary hemorrhagic telangiectasia. Am. J. M. Sc., 18:261-268, 1931.
7. Goldstein, H. I.: Hereditary epistaxis with and without multiple hemorrhagic telangiectasia. Arch. Int Med., 48:836, 1931.
8. Houser, K. M.: Hereditary hemorrhagic telangiectasis. Ann. Otol., Rhin. & Laryng., 43:731, 1934.
9. Meikle, G. J.: Hereditary hemorrhagic telangiectasis. Lancet, 2:863, 1933.
10. Moyer, J. H., and Ackerman, A. J.: Congenital familial hemorrhagic telangiovenous fistula in two members of a family. Ann. Int. Med., 33:775-802, 1948.
11. Osler, W.: A family form of recurring epistaxis associated with multiple telangiectasis of the skin and mucous membranes. Bull. Johns Hopkins Hosp., 12:333, 1901.
12. Osler, W.: On telangiectasis circum scripta universalis. Bull. Johns Hopkins Hosp., 18:401, 1907.
13. Singer, K., and Wolfson, W. Q.: Hereditary hemorrhagic telangiectasis; analysis of capillary heredopathies. New England J. Med., 230:637-642, 1944.
14. Stock, M. F.: Hereditary hemorrhagic telangiectasia (Osler's disease); review of literature and report of cases. Arch. Otol., 40:108-114, 1944.
15. Teahan, W. W.: Hereditary hemorrhagic telangiectasis in six generations. Ann. Int. Med., 13:535-543, 1939.
16. Wells, E. B.: Hereditary hemorrhagic telangiectasia. Am. J. M. Sc., 211:577-582, 1946.
17. Wintrobe, M. M.: Clinical hematology. 2d Ed., p. 656-665. Philadelphia: Lea & Febiger, 1946.

One out of every 400 people in the U. S. is working as a nurse, according to the Public Health Service's new "Health Manpower Source Book, Section II: Nursing Personnel." Also in the 88-page publication, PHS points out that general hospitals now employ four times as many nurses per patient as in 1938.


COSMETIC *HAY FEVER?*

Prescribe UNSCENTED AR-EX Cosmetics

When perfumes or scented cosmetics cause allergic reactions — prescribe UNSCENTED AR-EX COSMETICS. Clinically tested to meet your high standards. Smart, fashion-right for patient acceptance. All needed beauty aids. Send for free Formulary

AR-EX COSMETICS, INC., 1036 W. VAN BUREN ST., CHICAGO 7, ILL.

AR-EX

HYPO-ALLERGENIC

Cosmetics

Clinically tested on allergic patients for use by allergic patients

Classified Advertising

Replies to advertisements with key numbers should be mailed in care of MINNESOTA MEDICINE, *2642 University Avenue, Saint Paul 14, Minn.*

RADIOLOGIST—Diplomate American Board in Radiology, thirty-one years old, Priority IV, Member ACR, desires association with hospital, individual or group. Address E-381, care MINNESOTA MEDICINE.

FOR RENT—Attractive doctor's suite in south Minneapolis. Wonderful location for a practice to be built up, or as an outlying office for a downtown doctor. Write Wm. L. Cochrane, 7301 Fremont Avenue South, Minneapolis 19, Minnesota. Telephone RO 9-8758.

WANTED—Psychiatrist—to associate with 100-bed mental hospital. Rocky Mountain region—serving six state area—devote some time to out-patients also. Five-room home available. Colorado license necessary. Address E-386, care MINNESOTA MEDICINE.

WANTED—Young, married physician to practice in city of 6,000 with drawing area of 40,000. Salary and opportunity to work into partnership with group of three physicians and one surgeon. Address E-387, care MINNESOTA MEDICINE.

WANTED—General Practitioner for obstetrics, internal and industrial medicine, and pediatrics. Associated with nine-man group in Northern Minnesota servicing four towns. Would practice in new building under construction with laboratory and x-ray facilities. City of 8,000 with trade area of 60,000. Two fine hospitals within ten miles. $10,000 starting with opportunity for partnership. Address E-389, care MINNESOTA MEDICINE.

WANTED—Physician for locum-tenens—one or more months. Address E-388, care MINNESOTA MEDICINE.

FOR RENT—Doctor's office in established uptown location—658 Grand Avenue, Saint Paul. Present physician retiring. Address Ramaley Realty Company, 666 Grand Avenue, Saint Paul 5, Minnesota. Telephone DAle 6541.

GENERAL PRACTITIONER WANTED—To purchase active general practice in North Dakota county seat with hospital. Available April 1. Non-resident must write State Board examinations January. Address E-390, care MINNESOTA MEDICINE.

Index to Advertisers

Abbott Laboratories	1124, 1125
Aloe, A. S., Co.	1177
American Meat Institute	1120
American National Bank	1183
Anderson, C. F., Co., Inc.	1126
Ar-Ex Cosmetics	1197
Ayerst, McKenna & Harrison	1118
Baker Laboratories, Inc.	1114
Bayer Co.	1110
Benson Optical Co.	1181
Birches Sanitarium	1183
Brown & Day, Inc.	1193
Buchstein-Medcalf Co.	1194
Caswell-Ross Agency	1106
Chicago Medical Society	1176
Classified Advertising	1198
Contour Chairs	1122
Cook County Graduate School of Medicine	1186
Crestview Hospital	1180
Dahl, Joseph E., Co.	1195
Danielson Medical Arts Pharmacy	1196
Druggists Mutual Insurance Co.	1196
Eaton Laboratories	1112, 1113
Ewald Bros.	Inside Back Cover
Glenwood Hills Hospital	1199
Hall, Anderson & Nordehn	1177
Hazelden Foundation	1186
Homewood Hospital	1194
Juran & Moody	1185
Knox Gelatine	1179
Lederle Laboratories	Facing page 1120
Eli Lilly & Co.	Front Cover, 1128
Marion Appliance Co.	1127
Mead Johnson & Co.	1200
Medical Protective Co.	1195
Merck & Co.	1109
Milwaukee Sanitarium	Back Cover
Mounds Park Hospital	Back Cover
National Life Insurance Co. of Vermont	1119
New Orleans Graduate School	1187
North Shore Health Resort	1189
Parke, Davis & Co.	Inside Front Cover, 1105
Patterson Surgical Supply Co.	1196
Pfizer Laboratories	1117
Physicians Casualty Association	1126
Physicians & Hospitals Supply Co., Inc.	1116, 1198
Professional Credit Protective Bureau	1111
Q-Test	1190
Quincy X-Ray & Radium Laboratories	1192
Radium Rental Service	1196
St. Croixdale Sanitarium	1108
Searle	1175
Sheltering Arms	1188
Ulmer Pharmacal Co.	1192
Upjohn	1121
Valleyview Hospital and Sanitarium	1191
Whittaker Laboratories	1193
Winthrop-Stearns, Inc.	1115
Wyeth, Inc.	1123

FOR SALE—General practice, established thirty-five years in small town 35 miles from Minneapolis. Farming community. Also office space—five rooms and drug room completely equipped. Reasonable terms. Address E-391, care MINNESOTA MEDICINE.

P&H ®

A Complete Service

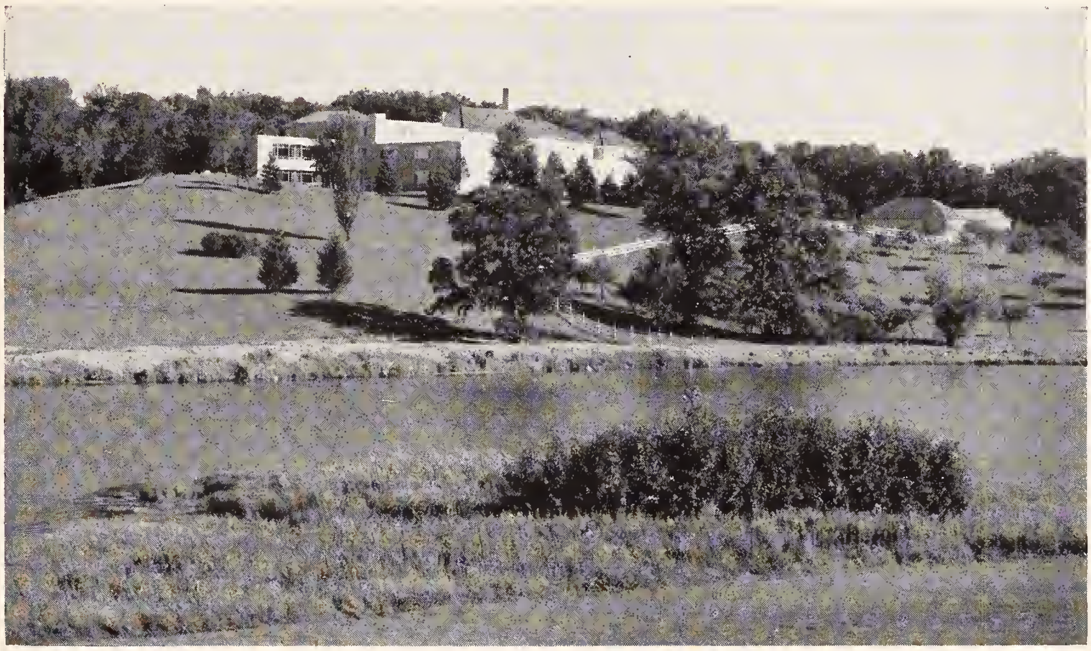
FOR THE MEDICAL AND HOSPITAL PROFESSION

Physicians & Hospitals Supply Company, Inc.

1400 Harmon Place • Minneapolis 15, Minnesota

DOCTOR...*This is Your Hospital and Your School of Neuropsychiatric Nursing*

(By that we mean that not only have these institutions undertaken to constitute a haven of help for patients, but they form, in your interest a *remarkable facility for you professionally.)*



View of hospital, school, buildings and environs, 7 minutes from downtown Minneapolis

A COMPLETE NEURO-PSYCHIATRIC HOSPITAL

Up-to-date in all respects, new, functional buildings, set in spacious grounds, rehabilitation center, electroencephalography, therapies, laboratory. One of the largest neuro-psychiatric staffs in the United States. A voluntary, non-profit, non-sectarian institution of which this region may be proud.

SCHOOL FOR NEURO-PSYCHIATRIC NURSING

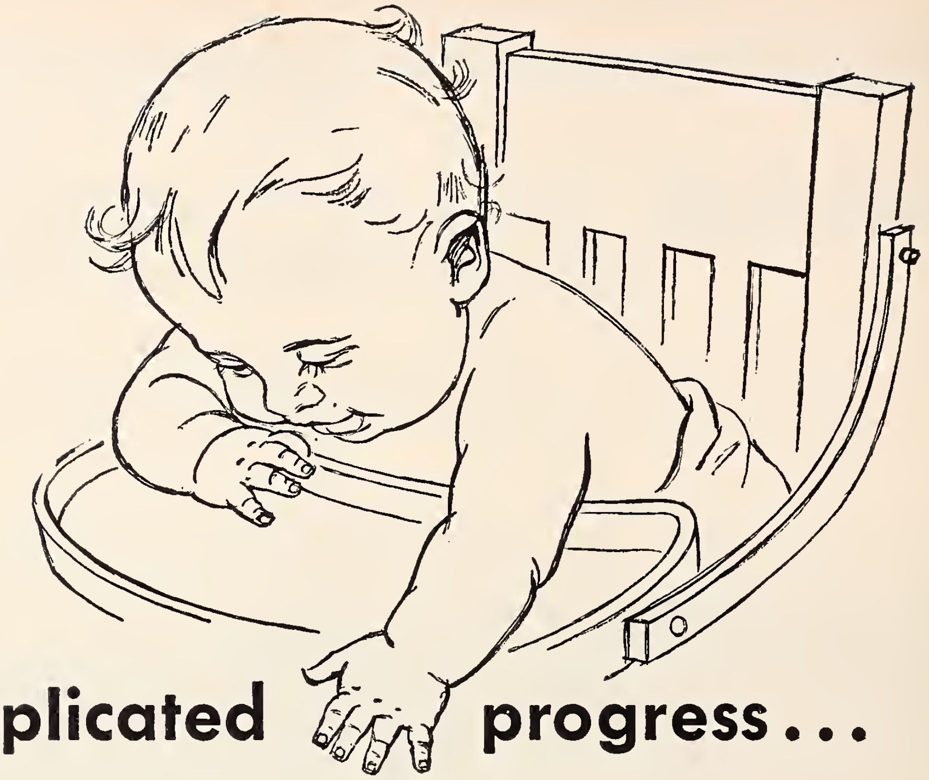
To offset the existing universal shortage of nurses, Glenwood Hills conducts a one-year course in neuropsychiatric nursing for both young men and young women. You have observed the skill and attitudes of our graduates and trainees. Recruit one or two in behalf of your profession as a "contribution" stipulating that we send them back to you when trained. We will. Meanwhile tuition, room and board are free.

Glenwood Hills* Neuro-psychiatric *Hospital

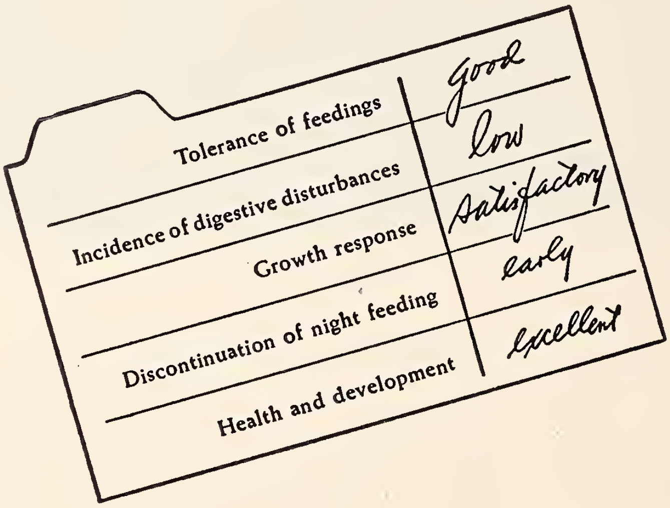
School of* Neuro-psychiatric *Nursing

3901 Golden Valley Road, Minneapolis 22, Minnesota JUniper 2771

Helen Swenson Rascop, Director of Nurses



uncomplicated progress...



Tolerance of feedings	good
Incidence of digestive disturbances	low
Growth response	Satisfactory
Discontinuation of night feeding	early
Health and development	Excellent

The uncomplicated nutritional progress[1] of infants fed Lactum® speaks for its sound rationale. Lactum is Mead's liquid formula made from whole milk and Dextri-Maltose.® It provides generous milk protein for sturdy growth and sound tissue structure, with sufficient calories to spare protein and meet the infant's energy needs.

Lactum is convenient and easy to prepare—simply mix equal parts of Lactum and water for a formula supplying 20 calories per fluid ounce.

1. Frost, L. H., and Jackson, R. L.: J. Pediat. 39: 585-592, 1951.

Lactum
LIQUID FORMULA FOR INFANTS
(Modified Milk)
MEAD
MEAD JOHNSON & COMPANY

Lactum

MEAD

MEAD JOHNSON & COMPANY
Evansville 21, Ind., U. S. A.

THEELIN

pure crystalline estrogen of natural origin

By promptly relieving symptoms and imparting a characteristic sense of well-being, THEELIN has helped minimize the distress of the menopause for hundreds of thousands of women. The *first* estrogen to be isolated in pure crystalline form and the *first* to attain clinical importance, THEELIN has, moreover, demonstrated a most notable freedom from side effects.

Available as THEELIN IN OIL—for rapid estrogenic effect and—as THEELIN AQUEOUS SUSPENSION—for more prolonged action—THEELIN facilitates individualized treatment schedules. And for greater economy, both THEELIN IN OIL and THEELIN AQUEOUS SUSPENSION are available in multiple-dose Steri-Vials® as well as in ampoules. Each mg. of THEELIN represents 10,000 international units of ketohydroxyestratriene.

THEELIN AQUEOUS SUSPENSION

Ampoules

1-cc. ampoules of 1 mg. (10,000 I.U.)
1-cc. ampoules of 2 mg. (20,000 I.U.)
1-cc. ampoules of 5 mg. (50,000 I.U.)

Steri-Vials

10-cc. vials of 2 mg. (20,000 I.U.) per cc.
5-cc. vials of 5 mg. (50,000 I.U.) per cc.

THEELIN IN OIL

Ampoules

1-cc. ampoules of 0.2 mg. (2,000 I.U.)
1-cc. ampoules of 0.5 mg. (5,000 I.U.)
1-cc. ampoules of 1 mg. (10,000 I.U.)

Steri-Vials

10-cc. vials of 1 mg. (10,000 I.U.) per cc.

MEDICAMENTA VERA
PD & CO.

Parke, Davis & Company
DETROIT, MICHIGAN

Season's Greetings

IN wishing you a Merry Christmas this year we would capture for you as much of the old time holiday spirit as possible. Accept our sincere thanks for your generous patronage which has been a source of real encouragement to us in 1953.

CR
AGENCY
Minneapolis

CASWELL-ROSS AGENCY

1177 N. W. Bank Building **Minneapolis 2, Minnesota**
Minneapolis—MA 2585 **St. Paul—PR 7004**

Insurors to:

Minnesota State Bar Association
Minnesota State Dental Association
Minnesota State Medical Association
Minnesota Society of C. P. A.
Minnesota State Pharmaceutical Assn.
Minnesota Auto Dealers Association
Minnesota Federation of Eng. Societies
Minnesota State Veterinary Medical Soc.
Hennepin County Medical Society
Hennepin County Bar Association
11th Judicial Bar Association
Minneapolis Association of Life Underwriters
Ramsey County Medical Society
Ramsey County Bar Association
St. Paul District Dental Soc.
Minneapolis District Dental Soc.
St. Cloud Dental and Stearns County Medical Society
Duluth District Dental Society
East Central Medical Society
St. Louis County Medical Society
West Central Dist. Dental Society
Northwest Proprietors Association
St. Paul Life Underwriters, Inc.

Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 36 **December, 1953** **Number 12**

Contents

MARGINAL NEUROSES IN EVERYDAY PRACTICE. Orientation.
Norman Johnson, M.D., Minneapolis, Minnesota 1225

THE PATIENT CONSULTS.
F. J. Hirschboeck, M.D., Duluth, Minnesota .. 1227

THE DYNAMICS OF EMOTIONS.
Howard P. Rome, M.D., Rochester, Minnesota 1232

FACTS AND FALLACIES IN THERAPY.
Norman Johnson, M.D., Minneapolis, Minnesota 1234

SOCIAL SECURITY FOR PHYSICIANS.
Carl B. Drake, M.D., Saint Paul, Minnesota .. 1238

BECKER COUNTY BLOOD BANK.
C. W. Moberg, M.D., Detroit Lakes, Minnesota 1241

INGUINAL HERNIORRHAPHY.
Wesley G. Schaefer, M.D., F.A.C.S., Minneapolis, Minnesota 1246

INJECTION THERAPY OF VARICOSE VEINS USING SYLNASOL FOAM.
H. A. Alexander, M.D., Minneapolis, Minnesota 1249

AN ACUTE CERVICAL TUMOR IN A MENTALLY DEFICIENT CHILD.
Heinz H. Bruhl, M.D., Faribault, Minnesota .. 1253

LABORATORY AIDS TO MEDICAL PRACTICE:
Laboratory Aids in the Diagnosis of Viral and Rickettsial Diseases.
Henry Bauer, Ph.D., Minneapolis, Minnesota 1257

CASE REPORT:
Mental Deficiency in a Child Whose Mother was Given Electric Convulsive Therapy during Gestation.
J. Yamamoto, M.D., E. M. Hammes, M.D., and *E. M. Hammes, Jr., M.D.*, Saint Paul, Minnesota 1260

PRESIDENT'S LETTER:
These Things I Have Liked 1262

EDITORIAL:
Disciplining a Discipline 1263
The Adolescence of Virology 1263
Medical Education a la Carte 1264

THE DEAN'S PAGE:
The Department of Pathology 1265

MEDICAL ECONOMICS:
Diet Film Gets Good Response 1266
AMA Studies Postgraduate Medical Education.. 1266
Justice Department to Handle VA Fraud Cases 1266
Hearings End on Medical Research Funds 1267
Interns, Residents in Training Double 1268

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS 1268

HISTORY OF MEDICINE IN MINNESOTA:
Medical History of the County of Yellow Medicine *(Cont.)*.
Mildred B. Lee, Granite Falls 1269

REPORTS AND ANNOUNCEMENTS 1276

WOMAN'S AUXILIARY 1282

IN MEMORIAM 1285

OF GENERAL INTEREST 1288

BOOK REVIEWS 1297

INDEX TO VOLUME 36 1301

Contents of MINNESOTA MEDICINE copyrighted by Minnesota State Medical Association, 1953

Entered at the Post Office in Saint Paul as second class mail matter. Accepted for mailing at the special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 13, 1918.

MINNESOTA MEDICINE

Official Journal of the Minnesota State Medical Association

Published by the Association under the direction of its Editing and Publishing Committee

Office of Minnesota State Medical Association,
496 Lowry Medical Arts Bldg., Saint Paul 2, Minnesota.

EDITING AND PUBLISHING COMMITTEE

E. M. Hammes, Saint Paul
Philip F. Donohue, Saint Paul
L. M. Eaton, Rochester
J. J. Heimark, Monterey
C. L. Oppegaard, Crookston
T. A. Peppard, Minneapolis
H. A. Roust, Montevideo
O. W. Rowe, Duluth
Henry L. Ulrich, Minneapolis
A. H. Wells, Duluth

EDITORIAL STAFF

Arthur H. Wells, Duluth, Editor
George Earl, Saint Paul, Associate Editor
Henry L. Ulrich, Minneapolis, Associate Editor

BUSINESS MANAGER

R. R. Rosell

Annual Subscription—$3.00. Single Copies—$0.40. Foreign and Canadian Subscriptions—$3.50.

The right is reserved to reject material submitted for editorial or advertising columns. The Editing and Publishing Committee does not hold itself responsible for views expressed either in editorials or other articles when signed by the author.

Classified advertising—ten cents a word; minimum charge, $2.00; key number, 25c additional. Remittance should accompany order.

Display advertising rates on request.

Address all communications concerning the journal to Minnesota Medicine, 2642 University Avenue, Saint Paul 14, Minnesota. Telephone Nestor 2641.

A MODERN PRIVATE SANITARIUM

for the Diagnosis, Care and Treatment of Nervous and Mental Disorders

MAIN BUILDING—One of 10 Units in "Cottage Plan"

ST. CROIXDALE ON LAKE ST. CROIX

PRESCOTT, WISCONSIN

Located on beautiful Lake St. Croix, 18 miles from the Twin Cities, it has the advantages of both City and Country. Every facility for treatment provided, including recreational activities and occupational-therapy under trained personnel. Close personal supervision given patients, and modern methods of therapy employed. Inspection and cooperation by reputable physicians invited. Rates very reasonable. Illustrated folder on request.

Prescott Office
Prescott, Wisconsin
Howard J. Laney, M.D.
Tel. 39 and Res., 76

Consulting Neuro-Psychiatrists
Hewitt B. Hannah, M.D., Andrew J. Leemhuis, M.D.
527 Medical Arts Bldg., Tel. MAin 1357, Minneapolis, Minn.

Superintendent
Ella M. Leseman
Prescott, Wisconsin
Tel. 69

..."*truly extraordinary*" *results in intractable bronchial asthma*

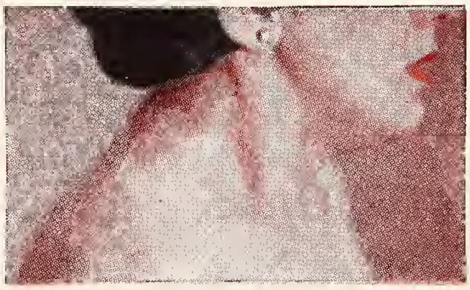
Cortone®

ACETATE

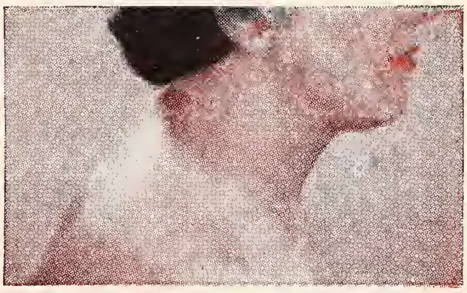
(CORTISONE ACETATE, MERCK)

In a review article on hormonal therapy,[1] complete relief of symptoms was reported in 62 per cent of 116 asthma patients. Another 24 per cent were made "quite comfortable." Duration of relief varied widely, with remissions occasionally lasting as long as several months. The author calls these results "truly extraordinary."

[1] Evans, R. R., and Rackemann, F. M.: *A.M.A. Arch. Int. Med.* 90:96–127, July 1952.



Before treatment. Observe typical facies and tense sternocleidomastoid.



After therapy with CORTONE. Note relaxation of accessory muscles of respiration.

All* CORTONE *Tablets carry this trade-mark:

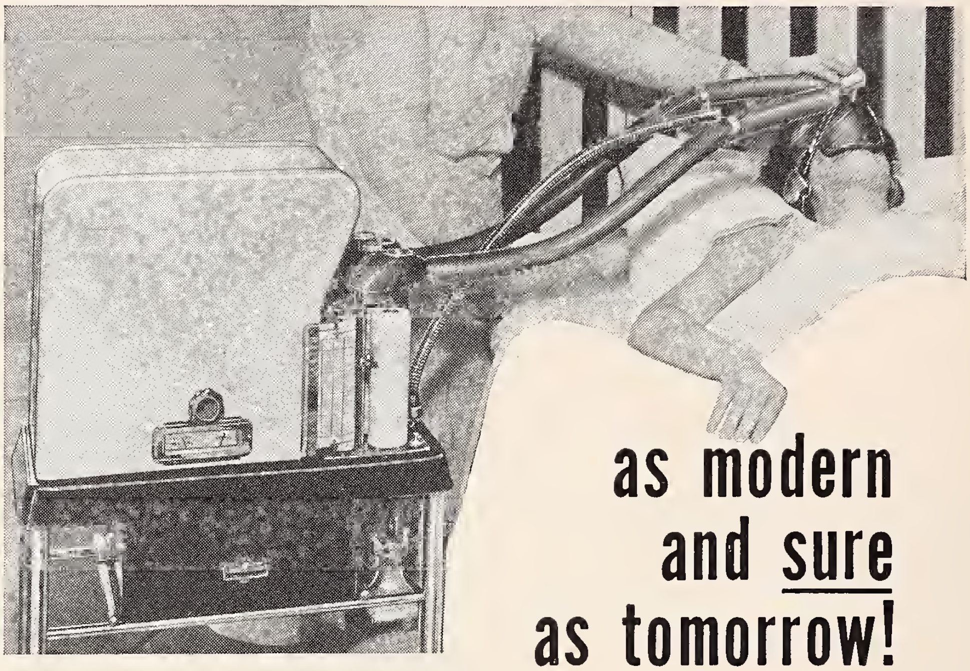
CORTONE *is the registered trade-mark of Merck & Co., Inc. for its brand of cortisone.*

MERCK & CO., INC.

Manufacturing Chemists

RAHWAY, NEW JERSEY

©Merck & Co., Inc.



as modern and sure as tomorrow!

Leading modern hospitals are choosing McKesson Waterless Metabolism Units.

Because these McKesson Metabolors look as modern as tomorrow—*and are as sure.*

Their operation is as *sure as tomorrow* because of sound basic design and up-to-the minute engineering—like the ample 4½-liter oxygen-capacity, first introduced by McKesson.

Sure also because of the same flawless precision workmanship and manufacture which always have characterized the world-famous McKesson Anesthesia Machines.

- *To be modern and sure, choose McKesson Metabolors.*
- *A Brochure is yours for the asking.*

ACCEPTED
COUNCIL ON PHYSICAL MEDICINE and REHABILITATION
AMERICAN MEDICAL ASSOCIATION

McKesson
WATERLESS
METABOLORS

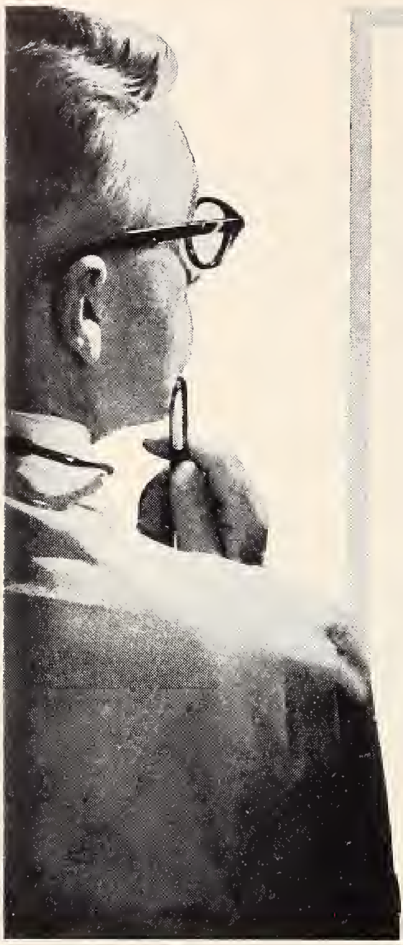
DISTRIBUTED BY M-1153a

PHYSICIANS & HOSPITALS SUPPLY CO., Inc.
1400 HARMON PLACE – MINNEAPOLIS 3, MINNESOTA

Doctor, would it be helpful to you in your practice to know that there is a food available at reasonable prices in the stores the year round having these attributes:

1. High public acceptance as to flavor and palatability—billions eaten annually.
2. One of the best of the "protective" foods with a well-rounded supply of vitamins and minerals.
3. Low sodium—very little fat—no cholesterol.
4. Sealed by nature in a dust-proof package.
5. One of the first solid foods fed babies.
6. Can be easily digested by old folks as well as infants.
7. Can be readily eaten out of hand, in milk shakes, on cereals, or in salads.
8. Can be baked, broiled or fried.
9. Can be used as an ingredient product in breads, pies, cakes and desserts.
10. Useful in bland and low-residue diets.
11. Mildly laxative.
12. May be used in the management of both diarrhea and constipation.
13. Can be used in reducing diets.
14. Can be used in high-calorie diets.
15. Useful in the dietary management of celiac disease.
16. Useful in the dietary management of idiopathic non-tropical sprue.
17. Useful in the management of diabetic diets.
18. Valuable in many allergy diets.
19. Belongs among foods useful in certain acute intestinal infections.
20. A protein sparer.
21. Favorably influences mineral retention.
22. Useful in the management of ulcer diets.
23. One of the easiest foods to eat or prepare.

FOR THE NAME OF THIS FOOD, PLEASE TURN THE PAGE



The answer is

BANANAS

If you would like

1. The authority for any of the statements made on the preceding page . . .
2. Additional information in connection with any of them...
3. The composition of the banana . . .
4. The nutritional story of the banana . . .
5. Information on various ways to prepare or serve bananas.

Please feel free to write to

Director, Chemical and Nutrition Research, United Fruit Company

PIER 3, NORTH RIVER, NEW YORK 6, N. Y.

NEUTRALIZE

THE

'STRESS PRINCIPLE'

now commonly admitted to be a considerable factor in

PAIN THERAPY,

particularly where an additional spasmolytic action is indicated.

'CANFIRIN'* COMPOUND CAPSULES

Trade Mark Applied For

For dependable simulated "Codeine-Like" therapeutic analgesic-sedative action without Codeine Side-Reactions.

Formula:
Each Capsule Contains:

Salicylamide	$3\frac{1}{2}$ grs.
Acetophenetidin	$2\frac{1}{2}$ grs.
Caffeine	$\frac{1}{2}$ gr.
In addition, each capsule contains:	
Phenobarbital	$\frac{1}{4}$ gr.
Mephenesin	$3\frac{3}{4}$ grs.

For Potentiated Synergistic Therapeutic Action

C. R. Canfield & Co.

2736-38 Lyndale Avenue South, Minneapolis 8, Minnesota
Pharmaceuticals Originated by Clinical Research

**Exclusive trademark of C. R. Canfield & Co.*

Upjohn

less-antigenic penicillin:

Cer-O-Cillin

Trademark Reg. U. S. Pat. Off.

POTASSIUM

Available as:

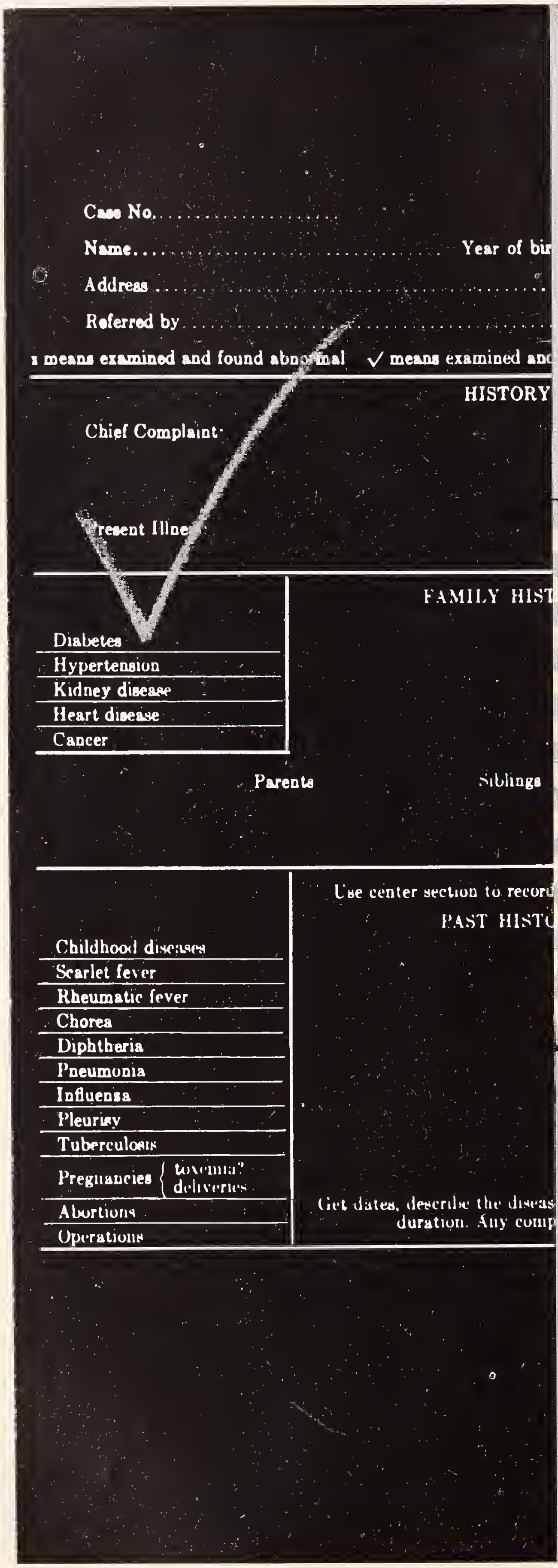
Sterile vials containing 200,000 and 500,000 units Crystalline Penicillin O Potassium.

Bottles of 12 buffered tablets, each containing 100,000 units Crystalline Penicillin O Potassium.

Depo*-Cer-O-Cillin Chloroprocaine for Aqueous Injection in vials containing 1,500,000 units Crystalline Chloroprocaine Penicillin O.

*TRADEMARK, REG. U.S. PAT. OFF.

The Upjohn Company, Kalamazoo, Michigan



Case No.....................

Name.... Year of bir

Address ....

Referred by ....

x means examined and found abnormal ✓ means examined and

HISTORY

Chief Complaint:

Present Illne

FAMILY HIST

- Diabetes
- Hypertension
- Kidney disease
- Heart disease
- Cancer

Parents Siblings

Use center section to record

PAST HIST

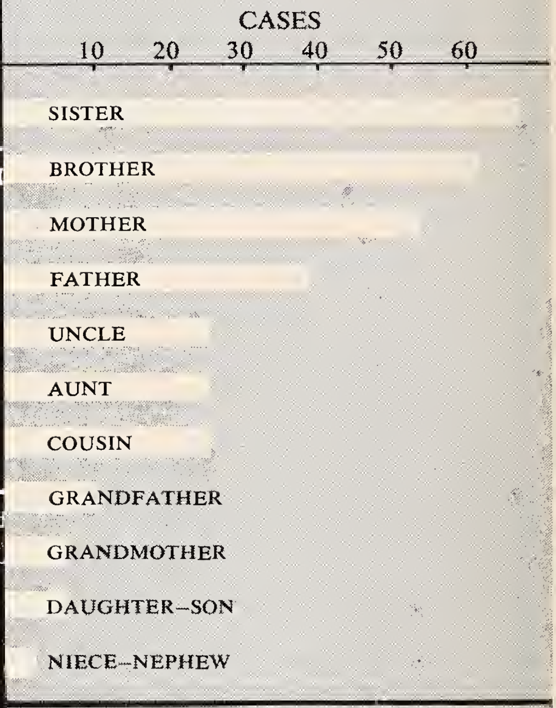
- Childhood diseases
- Scarlet fever
- Rheumatic fever
- Chorea
- Diphtheria
- Pneumonia
- Influenza
- Pleurisy
- Tuberculosis
- Pregnancies { toxemia? deliveries
- Abortions
- Operations

Get dates, describe the diseas duration. Any comp

when the history hints at diabetes

CLINITEST®
BRAND

for urine-sugar analysis



The Diabetic Relatives of 265 Diabetics[1]

In view of "...the very high incidence of...unsuspected cases among the blood relatives of diabetic patients,"[2] urine-sugar testing of all such individuals should be routine and frequent.

1. Barach, J. H.: Diabetes and Its Treatment, New York, Oxford University Press, 1949, p. 38.
2. Allen, F. M.: Diabetes Mellitus, in Piersol, G. M., and Bortz, E. L.: Cyclopedia of Medicine, Surgery, Specialties, Philadelphia, F. A. Davis Company, 1951, vol. 4, p. 505.

AMES
COMPANY, INC., ELKHART, INDIANA
Ames Company of Canada, Ltd., Toronto

46453

THE BUTCHER . . .
THE BAKER . . .
and CANDLE STICK MAKER . . .

In fact persons in every business and profession are confronted now days with a constantly increasing burden of slow and unpaid accounts. If this is true in your practice then the Professional Credit Protective Bureau can really help you.

The Professional Credit Protective Bureau is collecting thousands of past due accounts in the professional field.

The Professional Credit Protective Bureau is a credit control organization that sees that the patient pays direct to the supplier of services. In other words you PAY THE COLLECTION ORGANIZATION AFTER YOUR PATIENT HAS PAID YOU and neither you nor the debtor is embarrassed.

Ninety-two leading trade associations . . . including many medical and dental organizations . . . are recommending this credit control system as part of their service to members.

It will pay you to investigate this tried and true system. Use the attached coupon.

Division of
The I.C. System
724 Metropolitan Bldg.
Minneapolis 1, Minn.

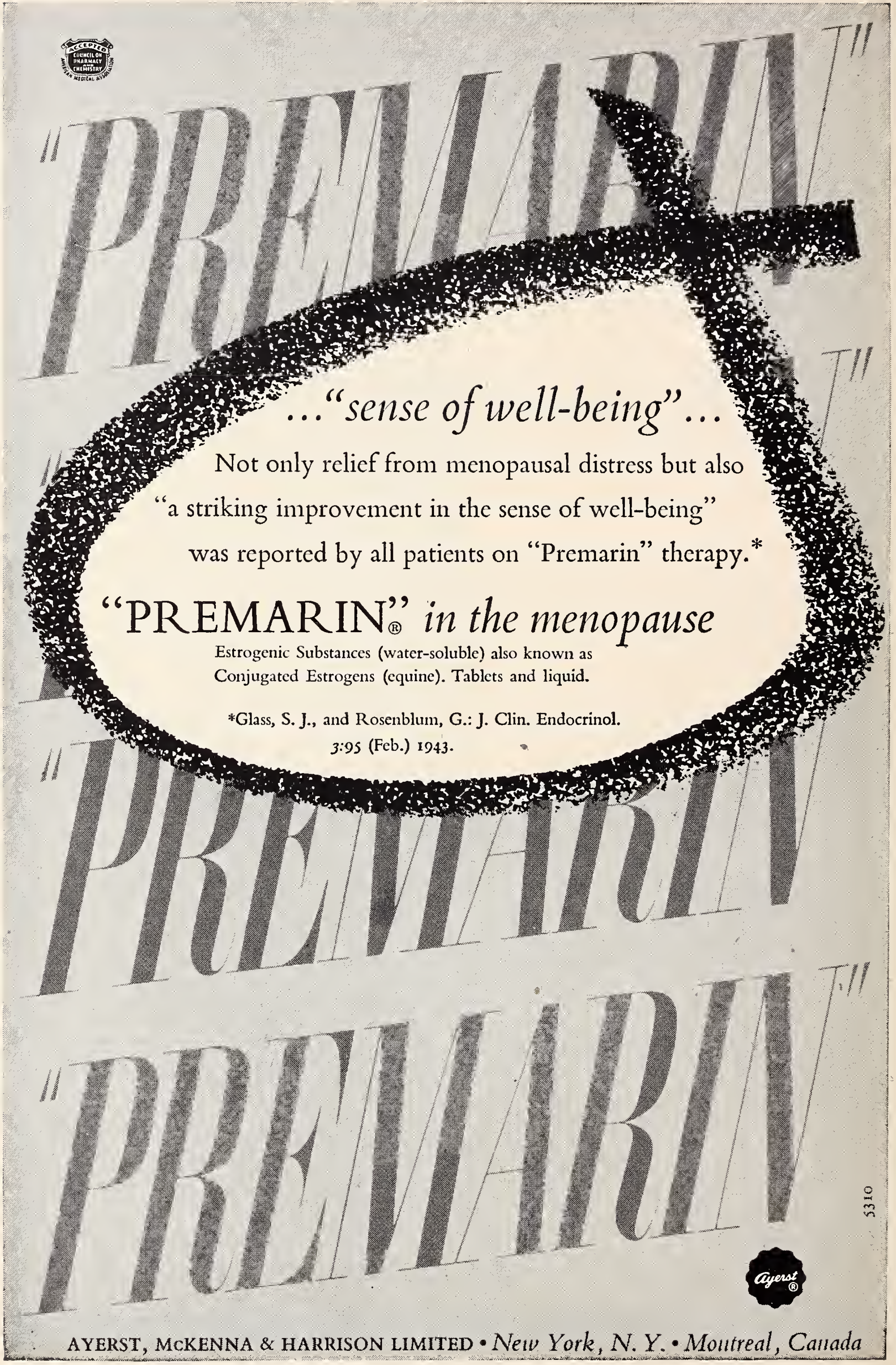
Professional Credit Protective Bureau
724 Metropolitan Bldg., Dept. MM 12-53
Minneapolis 1, Minn.

Please send me full details on the operation of your collection service.

Name ....

Address ....

City .... State ....



..."sense of well-being"...

Not only relief from menopausal distress but also "a striking improvement in the sense of well-being" was reported by all patients on "Premarin" therapy.*

"PREMARIN"® *in the menopause*

Estrogenic Substances (water-soluble) also known as
Conjugated Estrogens (equine). Tablets and liquid.

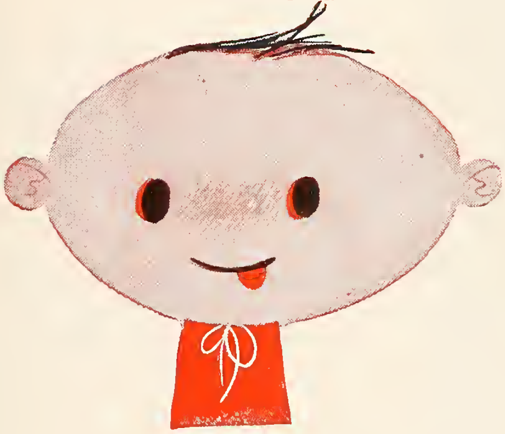
*Glass, S. J., and Rosenblum, G.: J. Clin. Endocrinol. 3:95 (Feb.) 1943.

5310

AYERST, McKENNA & HARRISON LIMITED • *New York, N. Y.* • *Montreal, Canada*

Taste Toppers . . . for all ages

that's what physicians and patients alike call these two favorite dosage forms of Terramycin because of their unsurpassed good taste. They're nonalcoholic — a treat for patients of all ages, with their pleasant raspberry taste. And they're often the dosage forms of first choice for infants, children and adults of all ages.



Terramycin®

BRAND OF OXYTETRACYCLINE

Pediatric Drops

Each cc. contains 100 mg. of pure crystalline Terramycin. Supplied in 10 cc. bottles with special dropper calibrated at 25 mg. and 50 mg. May be administered directly or mixed with nonacidulated foods and liquids. Economical 1.0 gram size often provides the *total dose* required for treatment of infections of average severity in infants.

Supplied: Bottles of 1.0 Gm.

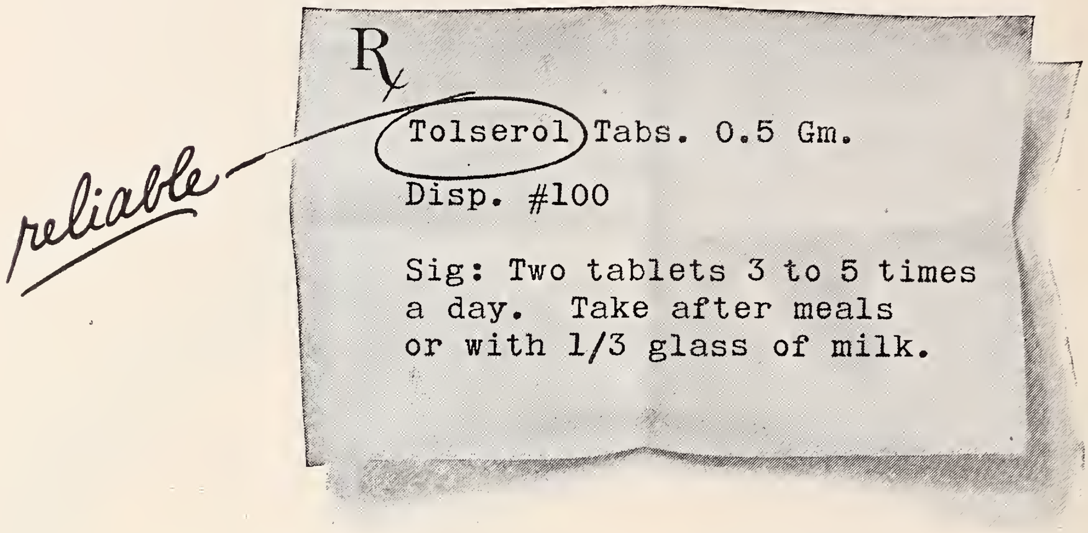
Oral Suspension *(Flavored)*

Each 5 cc. teaspoonful contains 250 mg. of pure crystalline Terramycin. Effective against gram-positive and gram-negative bacteria, including the important coli-aerogenes group, rickettsiae, certain large viruses and protozoa.

Supplied: Bottles of 1.5 Gm.

Pfizer **PFIZER LABORATORIES,** *Brooklyn 6, N. Y., Division, Chas. Pfizer & Co., Inc.*

RAPID ABSORPTION—*MAXIMUM THERAPEUTIC EFFECT*



reliable

℞

Tolserol Tabs. 0.5 Gm.

Disp. #100

Sig: Two tablets 3 to 5 times
a day. Take after meals
or with 1/3 glass of milk.

The clinical effectiveness of different brands of mephenesin tablets depends on their rate of absorption. A mephenesin tablet that disintegrates slowly is absorbed slowly. The resulting low blood levels may never produce a maximum therapeutic effect. Results with such a tablet are usually poor.

Tolserol Tablets are a result of extensive study and are formulated to disintegrate rapidly for fast absorption, thus maintaining optimum blood levels.

Tolserol

(Squibb Mephenesin)

Complete information on the use of Tolserol in muscle spasm of rheumatic disorders, in neurologic disorders and in acute alcoholism is available from the Professional Service Department, Squibb, 745 Fifth Avenue, New York 22, N. Y.

SQUIBB

NYLON elastic stockings at no sacrifice of correct support

Bauer & Black Nylons combine new beauty with established principles of correct therapeutic support

A woman's vanity can be a formidable thing—particularly when *you* want to prescribe elastic stockings that give correct support and *she* insists on beautiful appearance.

But now you can give her the beauty she demands with the support she needs in Bauer & Black Nylon Elastic Stockings. They're *fashioned to* exert greatest pressure at the ankles, with pressure gradually decreasing from ankles up, gently speeding circulation.

Open toe avoids foot constriction and promotes foot comfort.

With support like this in stockings that are sheer, inconspicuous and non-discoloring, you can expect full patient cooperation.

More women choose Bauer & Black than any other elastic stocking.

BAUER & BLACK

ELASTIC STOCKINGS

Brown & Day, Inc.
62-64 EAST 5th ST.
ST. PAUL, MINN.

NOTE THESE SUPPORT FEATURES

BAUER & BLACK FASHIONED STOCKING knitted with rear-fashioning seam so that pressure is adjusted to leg contours avoiding undesirable constriction. Pressure decreases gradually from ankle up, thus gently speeding circulation.

Shaded area indicates correct pressure pattern.

They all like

pediatric

ERYTHROCIN

TRADE MARK

STEARATE

(Erythromycin Stearate, Abbott)

oral suspension

. . . the cocci-killing antibiotic for children of all ages. Tasty, stable, ready for instant use. *No mixing required*—drug retains potency for at least 18 months.

Winter infections—otitis media, bronchitis, sinusitis, pharyngitis and pneumonia—are especially sensitive to *Pediatric* ERYTHROCIN. Also, pyoderma, erysipelas, certain cases of osteomyelitis, and other infectious conditions.

Many physicians make it a practice to always prescribe *Pediatric* ERYTHROCIN when the organism is staphylococcus, because of the high incidence of staphylococcic resistance to many other antibiotics. And when the organism is resistant or when the patient is sensitive to penicillin and other antibiotics.

Pediatric ERYTHROCIN is specific in action—*less likely to alter normal intestinal flora than most other antibiotics.* Gastrointestinal disturbances are rare. No serious side effects reported.

Pediatric ERYTHROCIN can be administered before, after or with meals. Available in 2-fluidounce, pour-lip bottles.
Your little patients will like *Pediatric* ERYTHROCIN. Abbott

1-251

DOSAGE

One 5-cc. teaspoonful
represents
100 mg. of ERYTHROCIN
25-lb. child • ½ teaspoonful
50-lb. child • 1 teaspoonful
100-lb. child • 2 teaspoonfuls
Every 4 to 6 hours

After using salt throughout life --

— it's a pretty hard blow to be told:

"No salt on anything *from now on!"*

To help your patient over this hurdle —

Neocurtasal®

Salt without Sodium

gives an appetizing tang to flat, salt-free diets. Completely sodium-free, Neocurtasal brings out the flavor of unsalted foods.

Wherever sodium restriction is indicated, Neocurtasal may be safely prescribed to keep the patient on the low sodium diet.

Neocurtasal is available in 2 oz. shakers and 8 oz. bottles.

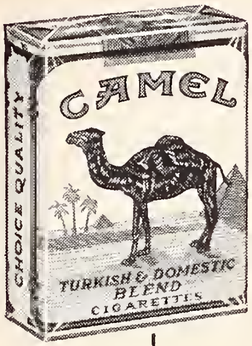
WINTHROP

Write for pad of low sodium diet sheets.

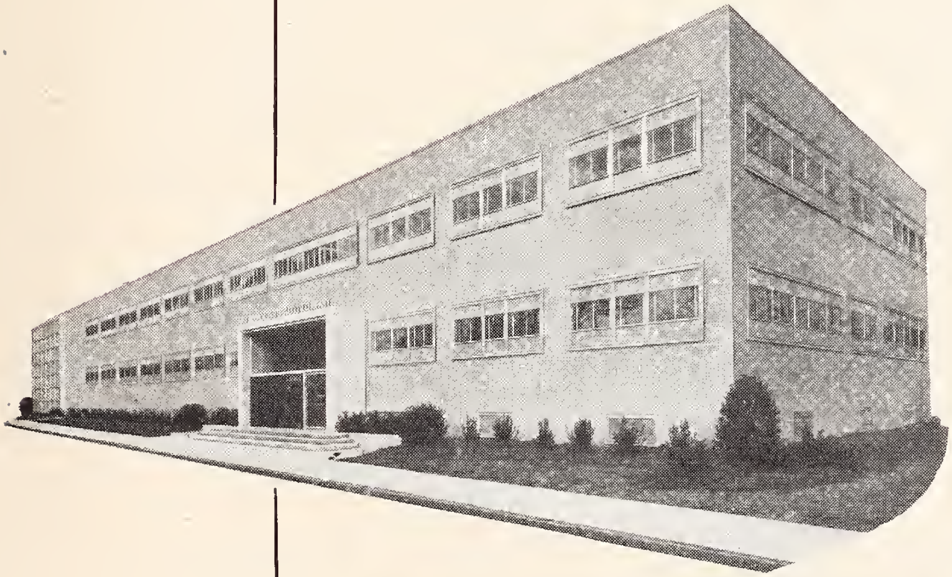
Neocurtasal,
trademark reg. U.S. & Canada

Winthrop-Stearns INC. NEW YORK 18, N. Y. WINDSOR, ONT.

FORTY YEARS OF RESEARCH-PROGRESS

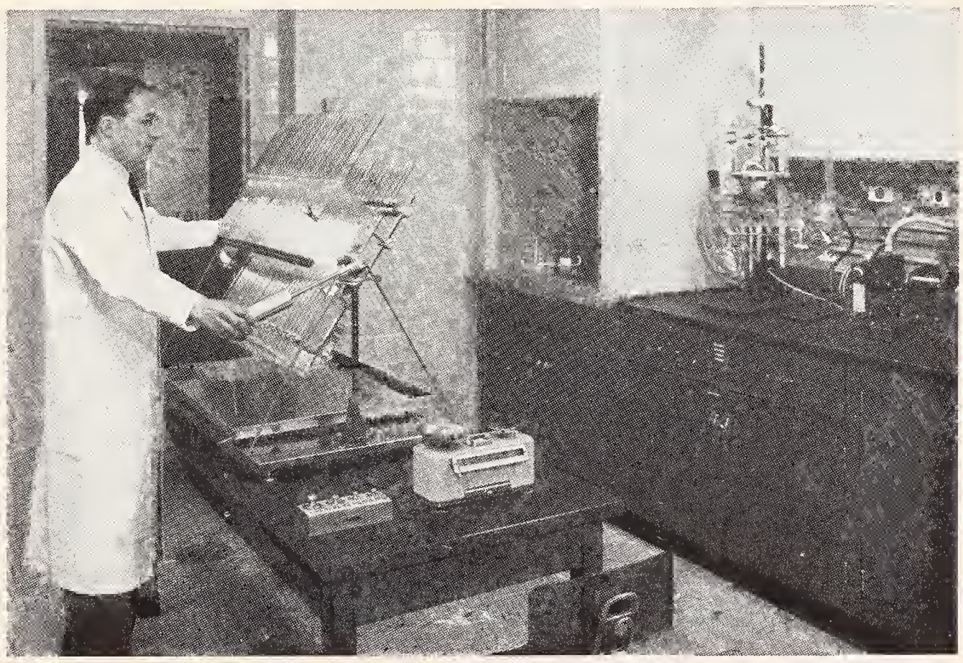


Camels' makers "never rest until the *good* is *better*... and the better, *best!*" For 40 years, our research has been constant, thorough, steadily progressive to make a good cigarette *better*... to make it *best*.



$2,000,000 addition to Camels' facilities — this new research building of ultra-modern laboratories.

Every laboratory equipped with the most modern research apparatus known today. (Right — "counter current" device that speeds analytical ingredient definition.)



R. J. REYNOLDS TOBACCO COMPANY · WINSTON-SALEM · N. C.

Conclusive evidence

of the effectiveness and low toxicity

of Furadantin

in treating bacterial urinary tract infections

is provided in its recent

acceptance by the Council

FURADANTIN®

brand of nitrofurantoin

ACCEPTED
COUNCIL ON
PHARMACY
AND
CHEMISTRY
AMERICAN MEDICAL ASSOCIATION

The N.N.R. monograph on Furadantin states:

“**Nitrofurantoin.—Furadantin (Eaton).—**

Actions and Uses.—Nitrofurantoin, a nitrofuran derivative, exhibits a wide spectrum of antibacterial activity against both gram-positive and gram-negative micro-organisms. It is bacteriostatic and may be bactericidal to the majority of strains of Escherichia coli, Micrococcus (Staphylococcus) pyogenes albus and aureus, Streptococcus pyogenes, Aerobacter aerogenes, and Paracolobactrum species. The drug is less effective against Proteus vulgaris, Pseudomonas aeruginosa, Alcaligenes faecalis, and Corynebacterium species; many strains of these organisms may be resistant to it. However, bacterial resistance to other anti-infective agents is not usually accompanied by increase in resistance of the organisms to nitrofurantoin. The drug does not inhibit fungi or viruses.

Nitrofurantoin is useful by oral administration for the treatment of bacterial infections of the urinary tract and is indicated in pyelonephritis, pyelitis, and cystitis caused by bacteria sensitive to the drug. It is not intended to replace surgery when mechanical obstruction or stasis is present. Following oral administration, approximately 40% is excreted unchanged in the urine. The remainder is apparently catabolized by various body tissues into inactive, brownish compounds that may tint the urine. Only negligible amounts of the drug are recovered from the feces. Urinary excretion is sufficiently rapid to require administration of the drug at four to six hour intervals to maintain antibacterial concentration. The low oral dosage necessary to maintain an effective urinary concentration is not associated with detectable blood levels. The high solubility of nitrofurantoin, even in acid urine, and the low dosage required diminish the likelihood of crystalluria.

Nitrofurantoin has a low toxicity. With oral administration it occasionally produces nausea and emesis; however, these reactions may be obviated by slight reduction in dosage. An occasional case of sensitization has been noted, consisting of a diffuse erythematous maculopapular eruption of the skin. This has been readily controlled by discontinuing administration of the drug. Animal studies, using large doses administered over a prolonged period, have revealed a decrease in the maturation of spermatozoa, but this effect is reversible following discontinuance of the drug. Until more is known concerning its long-term effects, blood cell studies should be made during therapy. Frequent or prolonged treatment is not advised until the drug has received more widespread study. It is otherwise contraindicated in the presence of anuria, oliguria, or severe renal damage.

Dosage.—Nitrofurantoin is administered orally in an average total daily dosage of 5 to 8 mg. per kilogram (2.2 to 3.6 mg. per pound) of body weight. One-fourth of this amount is administered four times daily—with each meal and with food at bedtime to prevent or minimize nausea. For refractory infections such as Proteus and Pseudomonas species, total daily dosage may be increased to a maximum of 10 mg. per kilogram (4.5 mg. per pound) of body weight. If nausea is severe, the dosage may be reduced. Medication should be continued for at least three days after sterility of the urine is achieved.”

The NITROFURANS
O_2N R
A unique class of antimicrobials

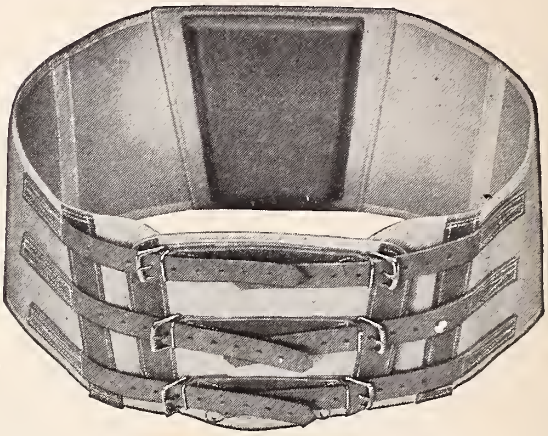
EATON LABORATORIES Inc.
NORWICH, NEW YORK

Popular Type SACRO-ILIAC BELT

This high-grade sacro-iliac support is made of orthopedic webbing, 6 inches wide, well reinforced and supplied with perineal straps.

To determine size needed, take measurements around hip, 3 inches below the iliac crest. Stock sizes 30 to 44. Extra sizes available on special order.

Professional Price $5.95



Abdominal Supporters *Elastic Stockings* *Trusses*

C. F. ANDERSON CO., INC.

Surgical and Hospital Equipment

ATlantic 6508, ZEnith 2055 **901 Marquette Ave.**

MINNEAPOLIS 2, MINNESOTA

It had to be good to get where it is

Coca-Cola
TRADE MARK REGISTERED

DRINK
Coca-Cola
REG. U. S. PAT. OFF.

THE COCA-COLA COMPANY

They'd decorate it all in an hour...

all the patients who represent the 44 uses for short-acting NEMBUTAL®

For Insomnia or Sedative Effect try the 50-mg. (¾-gr.) Nembutal Sodium capsule.

For Brief and Profound Hypnosis try the 0.1 Gm. (1½-gr.) Nembutal Sodium capsule

- For every patient's need . . . in many dosage forms . . . *in more than 44 clinical conditions,* short-acting Nembutal offers these advantages:

1. *Short-acting* Nembutal *(Pentobarbital, Abbott) can produce any desired degree of cerebral depression—from mild sedation to deep hypnosis.*
2. *The dosage required is small—only about one-half that of many other barbiturates.*
3. *Hence, there's less drug to be inactivated, shorter duration of effect, wide margin of safety and little tendency toward morning-after hangover.*
4. *In equal oral doses, no other barbiturate combines quicker, briefer, more profound effect.*

Won't *you* remember—and compare—these advantages the next time, and every time, you write a barbiturate prescription?

Abbott

1-255A

'Carbo-Resin' Therapy Simplifies Control of Edema

- Permits more liberal salt intake, enhances palatability of diet
- Safely removes sodium from intestinal tract and prevents its reabsorption
- Decreases the frequency of need for mercurial diuretics by potentiating their effectiveness
- May be lifesaving therapy for patients who have developed a resistance to mercury
- Useful in congestive heart failure, cirrhosis of the liver, edema of pregnancy, hypertension, or whenever salt restriction is advisable

Eli Lilly and Company
Indianapolis 6, Indiana, U. S. A.

Suspended in orange juice

Baked into brownies or cookies

Blended into gelatin dessert

Lilly

Variety is the key to palatable 'Carbo-Resin' therapy.

'Carbo-Resin,' Unflavored, may be incorporated into cookies, fruit juices, and desserts. Printed recipes for your patients are available from the Lilly representative or direct from Indianapolis. A book containing low-sodium diets is also available for distribution to patients.

CAUTION: 'Carbo-Resin' is supplied in two forms—flavored and unflavored. Only 'Carbo-Resin,' Unflavored, is suitable for incorporation into recipes.

POWDER

'Carbo-Resin'

(CARBACRYLAMINE RESINS, LILLY)

Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 36 **December, 1953** **Number 12**

MARGINAL NEUROSES IN EVERYDAY PRACTICE

Orientation

NORMAN JOHNSON, M.D.
Minneapolis, Minnesota

IN THE HOPE that terms may come to mean about the same to each of us, may we spend a moment defining several. Our topic is concerned with "Marginal Neuroses."

Marginal is easy enough—meaning subacute, moderate in severity, early. During this symposium, keep in mind that we speak of marginal cases only, usually the result of some situation. We are not dealing with inveterate cases or those with grievous personality defects.

Neurosis deserves thought. It is a poor term and meaningless unless the whole description, "psychoneurosis" is used. "Neurosis" stems from "neurone," but there is nothing wrong with the neurones. They function splendidly. This disease "neurosis" is a result of the messages which are being sent over these neurones. They are too violent, or too severe, or totally inappropriate to the situation. To describe a disease as "neurosis" is not to describe it at all. If you will permit your imagination to establish a concept of what actually takes place in the disease we term "neurosis," it might better be called "psychemia." For its manifestations are better understood if one thinks in terms of a humoral element, circulating about the body, and modifying the reactions of every cluster of cells which it contacts. And this circulating evil humor originates in that portion of the brain which contains the emotional forces.

Disease.—A neurosis is a disease—like sarcoidosis. But this term *disease* serves a double purpose here. It also describes the status of the disease, which is a state of dis-easiness. In this world, people are either easy or they are dis-easy. The neuroses, being states of exaggerated excitability, do not allow a person to feel easy at any time.

Emotion.—We need a real understanding of this term. Its derivation indicates a force which is moving. Never think of emotion without recalling that it is a moving force—craving some method of expression. If prohibited from its natural means of expression, it will try to escape via a less natural route. But it *must* go into action and, until it does, its owner is temporarily in some degree of uneasiness. The strength of the force seeking outlet (and some other factors) will determine how severely ill he becomes.

We are all neurotic every day. Feelings, in varying degrees of strength, arise in us and create potential cellular response. The alarm reaction is dramatic in its physical expressions. Lesser degrees of feeling will produce moist palms, dry mouth for the uneasy speaker, vasodilation of the skin called blushing, urgency and frequency of urination, bad dispositions, "goose pimples," et cetera. If the degree of stimulus is sufficient, the response becomes severe or continuous; and ordinary reactions of daily life assume a status of "disease." Most of the manifestations of this stimulus, being unnatural routes of exit for the force which is at work, are really perversions. Since natural outlet is prohibited or denied, fear and anger will find a perverted form of expression. This outward manifestation is the symptom

---

Introductory remarks in the Symposium on Marginal Neuroses in Everyday Practice at the centennial meeting of the Minnesota State Medical Association, Saint Paul, Minnesota, May 19, 1953.

which brings the patient to us for relief. There seems to be no bodily symptom produced by pathology which cannot be duplicated by the stimulus of a strong feeling sending messages over a neuron pathway to an organ or group of cells.

Man is, in a sense, a gadget with a purpose. The purpose is to make a response of some kind to every form of stimulus. The nature of these responses is of maximum interest to physicians. Diagnosis is dependent upon interpretation of these responses. The effects of treatment are measured by these responses. Man makes responses which are either to his advantage or to his disadvantage. But he makes responses. His responses to the stimuli of emotional forces in the neuroses are obviously disadvantageous. But they are compulsory. Never lose sight of the compulsory nature of responses to strong emotional forces. One does not find much success in controlling the blush of embarrassment or the palpitation of strong fear.

We need to appreciate that man responds to stimuli in each of these realms: (a) the realm of feeling; (b) the realm of intellect; (c) the realm of mood, and (d) the realm of the physicochemical.

If we attempt to treat the dis-ease of psychoneurosis, we must be prepared to evaluate not only the last realm (d), which is our natural interest, but also the variants which are produced in mood and intellect. A patient in whom a strong (or continuous) emotional urge exists becomes what we call "tense" through his effort to prevent the natural reaction to that feeling. His tension, if severe enough, will produce a paralysis of his ability to choose his reaction, of his abilities to be logical or reasonable in his behavior. In addition, this contained force may alter his mood; and most assuredly it can produce misbehavior of many organic structures in the body. He is trying to drive his machine with his brakes set. Hence the frequency of fatigue. His whole being is in a state of resistance. This will be evidenced by increased tonus of voluntary musculature, especially in the area of the neck and shoulders, and in the low back. He tries, by will, to propel his craft across stream to his destination while strong currents tend to force him contrariwise—even into the rapids. He is caught—trapped—between his intellectual desire to do something or to be something, while strong emotional forces prevent the usual easy progress in the direction of his choice.

Picture also that man's economy of action is based on countless reflex acts which he either inherits at birth or develops in infancy. Many of his emotional responses are based on a conditioned reflex which cannot be managed by reason or by will. Except that the will can inhibit. His response to the stimulus of emotion may be repeated so often as to attain the status of a conditioned reflex. A given situation, like criticism, is met. He learned long ago to resist criticism. It creates a reflex fear. He hides the fear; but its force stimulates the gastrointestinal tract, seeking a way out. The result is colitis; and it is the product of two reflex conditionings out of his past experience. There is no effective treatment available to him, or to you, except some method which will re-process those reflexes. Each time the pattern is repeated, the ease with which the reflex operates is improved.

So the average practitioner of medicine has a great responsibility to his patients who become diseased by this mechanism. If the marginal cases can be restored to proper response through understanding and a wee bit of wisdom in treatment, we may contribute largely to diminishing our unholy statistics in the U.S.A. One out of every ten is being supported in a state institution. We sorely need more knowledge and better treatment for cancer, for polio, et cetera. We need even more the knowledge which will entitle us to help re-adjust persons who, through ignorance and lack of training, cannot manage their own horsepower. The only power available to man resides in his emotional equipment. Strange there is nowhere any deliberate plan by which people are taught how to feed just enough power into the engine to run it properly through the traffic of life. We need to teach our fellows how to use the foot throttle, and to shift gears, in order to be in accord with the requirements of living. And we must needs wait until they are ill before we commence. Training of physical skills we have in abundance; training of intellectual skills is available to almost everyone; where is the academy which teaches skill in the use of our power plant?

This disease *neurosis* appears in two forms: (1) a loss of ability to generate power, and (2) the generation of more power than is manageable. In the first, fortunately rare (because it is more

(Continued on Page 1231)

THE PATIENT CONSULTS

F. J. HIRSCHBOECK, M.D.
Duluth, Minnesota

THE SUBJECT assigned me to discuss, invites me, I believe, to consider the patient with functional complaints as he presents himself in the consulting room; the type of person he is; his manner and characteristics as he cites his case and the nature and description of the symptoms he presents.

The lack of a term which is sufficiently inclusive and descriptive of such a person has puzzled me, but it seems to me proper to speak of him as "nervous"—a too simple term, possibly, but yet sufficiently descriptive to supply a common basis of understanding among us as to what is meant. From the standpoint of semantics, to say the "nervous patient" may be a rhetorical subterfuge, but its very simplicity is an advantage, without the adverse connotations that may be found in the patient's mind through the more or less obsolescent, but to him distasteful, terms of neuroticism and neurasthenia.

Patients do not like to be called neurotic, with the opprobrious interpretation they infer, and frequently the protest is raised that they are not and do not want the consultant to think they are neurotic, thereby immediately creating a barrier in the physician-patient relationship.

One may take exception to this simplification in terms because of a lack of suitable differentiation in types of reaction, but the patient does not understand a more scientific terminology and may resent the implications of conversions, obsessive compulsive reactions, depressions, dissociations, phobias and hysteria. These terms are all very fine in our discussions among ourselves, but mean little to the patient; no more than when we tell him a cancerous stomach is scirrhous, medullary, adenomatous or colloid. In fact, many scientific terms, even to us, are not always specific and tend to overlap in their heterogeneity. There is always the possibility, too, that too much scientific jargon in discussing a situation with the patient may increase his insecurity, and, intellectual attempts at explanation aggravate his frustration.

The patient who has the more simple anxiety and fatigue reactions, with psychosomatic symptoms, tends to consult the general practitioner or internist, as his symptoms do not have the severity associated with the major psychoneuroses and are frequently combined with psychosomatic, or, inversely, somatopsychic relationships, the latter fewer in number, but equally important. The vast number of instances of "organ neuroses" almost *postulate* consultation with physicians skilled in organic diagnosis and the implications of psychiatric possibilities are usually remote from the patient's thoughts.

It is this large group that seems to emerge as a special province of the internist and is generally thought as representing in a varying measure about one-half of the doctor's clinical practice; and it is of these I wish to speak. The more involved psychiatric problems transcending the scope of this discussion rightfully demand consultation with psychiatrists more highly skilled in psychodynamic appraisal, and their aid should be unstintingly sought. It is my belief that as nearly as one can, however, restrict the consultation in the more simple cases to a single person, the more effective diagnostic and therapeutic procedures become, provided they are consistent with good practice. A division of responsibility and the introduction of multiple personalities often leads to confusion. Even though the complexity of the situation may require additional thought and study, the integration of the problem is best unified in one person whenever possible.

Not all physicians have a similar aptitude in caring for the nervous patient, and many lack the flexibility needful in establishing a suitable rapport because of personality characteristics, organistic training or a simple lack of interest in the type of problem under consideration.

Physicians know that diagnostically psychogenic causes play a very considerable role in the production of symptoms. Statistically, Allen and his associates at the Mayo Clinic, have reported in a review of many patients, that an accuracy of over 90 per cent may be attained in the diagnosis of psychosomatic conditions merely by the expedi-

---

From the Duluth Clinic.
Read in the Symposium on Marginal Neuroses in Everyday Practice at the centennial meeting of the Minnesota State Medical Association, Saint Paul, Minnesota, May 19, 1953.

ency of careful evaluation of pertinent historical and personal data elicited at the time of the original interview and cushioned by a physical examination which may uncover or remove from consideration the welter of possible physical conditions which can be the cause of anxiety to the patient, or, concern to the diagnostician.

With the increasing availability of diagnostic laboratory and mechanical aids, it would be the height of folly to overlook any possible data which will help to make a diagnosis more certain, and all assumed functional symptoms must be carefully weighed against organic possibilities.

Failure to recognize an organic condition in one who is basically nervous seems to be an innate fear in every clinician. There seems to be no criticism so violent, nor any chagrin so deep, as when such a physical situation is discovered later by another consultant. Yet there are certain diagnostic criteria and data which one may elicit by close observation and interest in these patients which are as direct and, one might say, almost as pathognomonic as in any other field of diagnosis.

When the patient presents himself in the consulting room, what may one find in the manner of his appearance and mode of presentation of his complaint? Oftentimes the consultant gains in his first impression that of a tense and anxious patient. The patient is more often a woman than a man, probably because of woman's desire to improve her state of health—inherently a desire to be at her best; but probably because, too, of the urgent insistence of the members of the family that she seek relief from a constant trying situation. Men, by the nature of their occupation and opportunity to meet many people, interpolated with many periods of recreation and diversion, are less harried by their nerves because of these diverting factors. If the patient has reached the point of exhaustion and relative despair in regard to his complaints, oftentimes abetted by the failure to obtain a sympathetic ear, he may show the external impression of his inner strife by a discouraged and listless demeanor; but as a rule a meticulousness and perfectionism of the patient is readily apparent in the neatness of his appearance and dress and his detailed relation of symptoms and complaints. Since these patients, because of fatigability, are not able to follow the more enervating physical pursuits, they may reveal a certain cultural charm, good taste and good manners gained through years of participation in less active areas by refuge in scholarship and study and by a professional interest or a dilettante exploration into the arts. They are more studious than athletic and from numerous experiences, find it more simple and more comfortable to maintain methodical practices in their lives which they find reduce their fatigue and increase their comfort. They are less likely to wish to stay up late and tend to be people of excellent habits and like to avoid dissipation. As one listens to the patient's complaints, it is noted that they frequently codify a list of symptoms with a relative distortion of values and sometimes widespread areas of distribution. The patient has been aptly called by Charcot, "The man with the little piece of paper," from which he carefully selects his symptomatic experiences. This conscientiousness in regard to detail is also exemplified by the voluminous letters these patients frequently write to their physicians.

If the patient experiences symptoms dominantly in a specific somatic zone, with a so-called organ neurosis, his complaint may be much more direct, as, for example, the patient who has a hyperacidity syndrome, cardiospasm or tumultuous heart action. The intensity with which the patient expresses his symptoms suggests to the consultant a deep sense of self-appraisal and what seems to be an egocentricity foreign to those of broader interests and less fixation on bodily functions.

It is often noted that there is frequently an undue sensitiveness to environmental stresses, with a tendency to be easily offended and to bear hidden resentment for a long time. Overwhelmed by their anxiety and continued self-analysis, there may intervene a lack of aggression and an easy resort to submission. They like to be well thought of, but are easily frustrated. They are often affected by the deaths and illnesses of friends and relatives, particularly if they happen to die or are ill of a cause rather dramatic, and apply the condition in the interpretation of their own symptoms. If the patient is able to, or must by necessity, because of politic reasons, contain his emotions within himself, inner seething tends to break out in somatic experiences. The patient, unfortunately, often makes his dearest friends and relatives victims of his disability and the constant relation of his complaints to his family often leads those nearest to him to turn a deaf ear to the reiteration of alleged discomfort, so that the patient takes refuge in superlative language and hyperbolic expressions.

The physician soon becomes aware of the situation and in proceeding to take the history, must school himself to the need of lending a sympathetic ear, lest the patient, with his native intuitive qualities, detect a lack of interest. Though the story may be unduly prolonged, it is often the key to the diagnosis and treatment, because of its content and whatever the astute observer may note between the lines. If the patient is unusually garrulous, he may be brought back into the track of continuity by skillful conversational maneuvers. The patient must never feel that he is being unduly limited in his recital or that its thoroughness may be interrupted. After the history is given, it may need to be further elaborated in regard to the many minutiae involved and a search made into the genetic and environmental influences that may prevail. It is commonplace for the consultant to learn, in the familial background, that there are hereditary psychoneurotic complaints in other members of the family. A quiet room, uninterrupted from the outside, is essential. It is in this way that the patient is more likely to tell his story with proper continuity and is less likely to develop prejudicial ideas.

An important element in obtaining the history from these patients is the discovery of latent and active assets these patients may have within them. It is important particularly because they frequently have definite talents, sometimes in the arts, in business, in home-making and in their fidelity to responsibilities. Obtaining this information is of inestimable value in treatment as a corollary to the psychological debits which seem so overpowering.

Patients with *psychosomatic conversion* are the particular interest and problem of the consultant in a general type of practice. The fear of organic disorder leads them to the general diagnostician. Their exaggerated physiological accompaniments of constant or periodic emotional states often engender rather specific organ reactions which, to an experienced clinician, are the clue toward a diagnostic direction. The pattern of complaint tends to be duplicated more or less in successive consultations, and it is a common experience to note that patients who have circulatory symptoms tend to complain at each visit in the same dynamic zone. This is true of the patient who has a gastrointestinal neurosis, a sex neurosis or an organ phobia, as observed by the fear of cancer in various specific organs.

In each zone of the body there appear to be certain suggestive complaints and symptoms of the underlying psychosomatic reaction and their repetitive similarity is striking.

Headaches on the top of the head, the so-called "clavus" headache, or headache beginning in the nape of the neck and extending over the top of the scalp, are frequently noted as expressions of tension and fatigue. The same is true of the band-like sensation of constriction over the eyes and around the base of the scalp, symbolically expressed by the clinician as being like the wearing of a helmet; the "tete en casque" of the French. The intensity of the patient's observations of minor, but yet normal, aberrations may be seen in the misinterpretation of the patient of the significance of floaters in the eye, the muscae volitantes of the vitreous, which are noted by everyone at times, but assume fantastic proportions in the nervous person. An oddly coated, a geographic or a scrotal tongue to them indicates the possibility of serious ill health, often with cancer in mind, and several times daily the tongue is viewed in the mirror and small changes noted by what seems to be a microscopic evaluation. The manner in which the patient protrudes his tongue upon request is quite characteristic. The tongue is protruded to its full length and breadth with considerable display of energy and as he does so, the patient frequently casts his eye furtively in the direction of his tongue to note if the source of his complaint is evident. Paresthesias in the tongue with a sense of burning and a sudden discovery on the part of the patient of the normal circumvallate papillae at the base of the tongue are favorite points of interest in the cancer-phobe.

Many of the patients seems to have symptoms that are subject to the patient's sense of vision, sense of touch and sense of hearing, and it is singular that the silent organs of the body, such as the liver, kidneys, spleen and the endocrine glands are usually free from suspicion on the part of the patient because he knows nothing about them and cannot detect their presence through his senses. Usually only the visible and noisy organs attract him; hence the predilection for gastrointestinal, cardiovascular, respiratory and paresthetic symptoms.

One of the most common symptoms complained of, noted by all clinicians and recognized as the mark of a neurotic person, is the well-known globus hystericus, which must not be confused, however, with the Plummer-Vincent syndrome of the patient with total achlorhydria, and very often associated with primary anemia. The symptom is probably associated with spasm in the area and cardiospasm in the lower end of the esophagus appears to be a psychological relative.

The patient with neurocirculatory asthenia can feel the pounding of his heart, notes chest pains in the left precordium and symptoms almost everywhere in the body because of the all-pervading influence of the heart and circulation. Nervous symptoms also come into the picture, particularly strongly with tremors, trembling of the hands and paresthesias. Circulatory reaction is sometimes so vigorous that patients seem to feel the coursing of the blood in the vessels and in their description, often associated with a sense of bubbling—an anatomic and physiologic impossibility. In the examination of these patients, vasomotor imbalance reveals itself many times in pronounced dermographia and during the course of the examination perspiration drops from the axillae. The patient tends to interpolate questions during the course of the examination, proceeding with the physician from area to area to learn if anything adverse has been found. Gently but firmly, the consultant must assure the patient that all findings will be explained to him as he summarizes them in the final interview.

Various paresthetic sensations are suggestive. It is striking how frequently they involve the left side of the body as compared to the right, probably because of the knowledge that the heart is more on the left side than on the right, and to the layman, a conspicuously left-sided organ. Paresthesias on one side of the body also may be an index that the patient is in fear of a stroke, a fear which is expressed many times, too, when the paresthesia is bilateral. It is a failure on the part of the clinician, indeed, if he is not aware of these connotations in the mind of the patient, and a failure to mention their significance may be disillusionary to the complainant. Mastodynia, or painful breasts, in women, at and after the menopause, practically always occurs on the left side, and seems to be a very significant nervous expression, with or without the menopause.

Many patients who complain of so-called shortness of breath in their terminology, without having circulatory decompensation, in reality have what is known to us as air hunger, and they must be questioned as to what they mean by shortness of breath. Usually it is found they have a professed inability to fill their lungs fully to the point of satisfaction. The physiologic disturbance as a result of vigorous effort in breathing may cause hyperventilation symptoms, because of the adverse interchange of gasses.

There probably is no symptom more common to the nervous patient than belching or burping; in fact, so characteristically is it a symptom of a nervous personality that even in the presence of organic disease, when frequently performed—because it is a performance—one feels that the belching may be a somatopsychic superimposition. Churning of the bowels and borborygmi due to increased physiological activity of the intestine are likewise suggestive, and under emotional stress, a nervous patient may have so much consciousness of this complaint in the lower abdomen, that he frequently finds social contact distasteful. In describing gastrointestinal complaints, patients frequently relate with detail various characters of the excreta which they consider abnormal.

Disproportion of size or contour of various parts of the body are, to the physically analytic mind of the patient, suggestive of dire causes. This has already been mentioned in the case of the papillae in the base of the tongue. I have noted on several occasions that the discovery of a prominent ensiform process in a patient raises considerable fear as to the presence of a tumor, which the physician is sought to examine so that he may prove or disprove its importance. In women, discovery of a lack of uniformity in the two breasts or in the submammary hypochondrial prominence may lead to anxiety. When the truth of this observation, with its benign nature, is noted, I frequently recall the sensitive observation of the sculptor of the Venus de Milo who portrayed it in his marble masterpiece.

In my experience, a sex neurosis is a particularly trying subject and apparently deepseated, and I have found consultation with the urologist and sometimes the psychiatrist extremely useful in the care of these patients.

In others, the universality of painful experiences in various parts of the body, sometimes at one point and sometimes another, without any regard to anatomic or physiologic distribution, may be recognized as the patient's constant awareness of the slightest discomfort. Some of the more fixed points of pain are an expression of anxiety regarding environmental factors which have predicated the location of the pain. One sees this quite frequently in patients where such diseases as angina pectoris, coronary thrombosis and cancer have been present in near relatives and acquaintances.

There is no more important feature in consultation than the performance of a satisfactory and thorough examination, with particular reference to the elucidation of possible findings in the areas complained of. Chest film and electrocardiographic examinations, in addition to the essential and relevant laboratory data, are not only a support in the diagnosis, but also yield graphic evidences to the patient in which he may be interested. Sometimes one must run the gamut of complete gastrointestinal study, including an examination of the stool, though the extent of the examination should be predicated to a large extent upon the complaint. These patients frequently have many examinations at the hands of other physicians and the question of cost and inconvenience must be weighed in the balance, though the patient should never be led to feel that thoroughness is being sacrificed for expediency. A great saving can sometimes be made by reviewing previous laboratory and x-ray findings from the hospitals where they have been patients or through the kindness of previous consultants.

After the initial judgment as to the patient's personality, his history, his complaints and his relevant physical examination, one finally is prepared to discuss the situation with the patient on dismissal. He must be assured of the absence, or if present, the nature of any true organic disease, and the mode of production of symptoms must be explained to him in language which he can understand. His personality reactions, favorable and unfavorable, and environmental stresses need to be elucidated and interviews with the relatives, without and in the patient's presence, need to be carried out to cover the whole range of a solution for the relief of the patient's distress. Thoroughness, but above all, understanding, usually yield significant results and a co-operative and grateful patient.

MARGINAL NEUROSES IN EVERYDAY PRACTICE

Orientation

(Continued from Page 1226)

difficult to treat), are to be found the most profound exhaustions. The engine goes dead and will not start up. Such cases are completely asthenic, full of despair, and totally disorganized. The second group show all the evidences, by sign and symptom, of increased "nervous tension." Their active emotional forces cannot find a natural exit for discharge. All responses are overexcitable and overstimulated. They are mentally distraught, distractible, excitable, suffering from insomnia, faulty memory, preoccupation, emotional storms, and a host of symptoms in the physico-chemical realm. In spite of a calm exterior and placid facies, they realize that they can no longer steer well—are fearful that this means they are becoming "crazy." Yet they cannot find a source of relief from their dis-ease. If they suffered from diabetes, plenty of physicians could help reduce blood sugar levels and avoid ketosis. Yet strangely enough, we do not turn out of our schools men trained in preventing this more common disease from reaching serious proportions. But its therapy is not difficult if we begin with the marginal case. In the hope that we may contribute something from experience, we present to you the following papers in this symposium.

THE DYNAMICS OF EMOTIONS

HOWARD P. ROME, M.D.
Rochester, Minnesota

AT THE CORE of the problem of emotions and the very many ways in which these are expressed and encountered in clinical practice lies anxiety. The manner in which the patient handles his anxiety characterizes his normal or psychoneurotic or psychotic adjustment. Thus anxiety in any of its very many forms is the important clue to the patient's problem.

Anxiety is purely a subjective phenomenon. It is a state of apprehension which arises when the individual is confronted by a conflict. Anxiety therefore is a universal experience. The important feature is the change which it produces in the state of well-being of the individual. For example, in the relatively uncomplicated instance, the anxiety syndrome is easily recognized by its physiologic concomitants: a generalized feeling of tension which is expressed in the actual physical tone of the voluntary muscles and palpitation, increased rate and depth of respiration, a sense of constriction about the chest, globus, a feeling of tightness or fluttering in the abdomen, sweating, a change in the color of the skin and other more subtle evidences of stimulation of the autonomic nervous system.

The sensations of the anxiety syndrome can be looked upon partly as the way in which tension makes itself felt and partly as the awareness of these involuntary vegetative discharges. There is a tendency for certain of these anxiety responses to predominate. In other words, there are preferred channels of its expression, so to speak. These give rise to certain clinical syndromes which the patient reports as his chief complaints. Since the same stressful response is so varied and so frequently mimics other conditions, it is necessary to have a clear and comprehensive understanding of the entire setting in which it occurs. For this reason, the accompanying thoughts and feelings of the patient are important. Too often the physician is aware of physiologic effects of anxiety, while being almost wholly ignorant of the psychologic events which precede it.

A good illustration is seen in the patient whose complaint is that of lightheadedness or dizziness. He gives a lengthy account of the episodic occurrence of these more or less disabling symptoms; how it affects his everyday life by making him feel insecure physically, as if he were going to faint. It keeps him from driving his car freely; it interferes with the conduct of his business because he cannot think clearly at these times or has difficulty in concentrating on the subject at hand. He may complain about his vision—the fact that things look blurred or hazy. At times he is aware of a queasy feeling which is just short of nausea; trouble getting his breath or the need to have to consciously breathe more deeply than usual. Then, too, at other times there is a feeling of numbness or tingling about his mouth or in the distal parts of his extremities.

Only when the entire picture is put together can the horse and cart be distinguished from each other and put into proper alignment. It becomes evident and obvious, once the pattern is discerned, that the picture is neither one of a developing acoustic neuroma nor a labyrinthine disturbance of the inner ear, but rather an anxiety syndrome which is presenting in the form of symptoms brought about by hyperventilation. The combination of the understandable physiologic effects of overbreathing and the systemic repercussions of anxiety are then seen as an easily explained result. However, this is not all, for if the physician will pursue his inquiry a bit further, he will learn that there is a definite sequence of events. First, there is anxiety. The phobic quality of anxiety may be ascribed to almost anything: fear of crowds or closed places, heights, sharp instruments; fear of disease such as cancer or impending insanity or any one or several of the very many phobias which appear so commonly. The overbreathing follows secondarily, and in its wake the host of signs and symptoms of which the patient complains.

It is surprising how often one sees patients in whose instance all sorts of investigations have been carried out in an attempt to ferret out the

---

From the Sections of Neurology and Psychiatry, Mayo Clinic, Rochester, Minnesota.

Read in the Symposium on Marginal Neurosis in Everyday Practice at the centennial meeting of the Minnesota State Medical Association, Saint Paul, Minnesota, May 19, 1953.

cause of this common form of expression of anxiety. Because it bears a distant resemblance to the hypoglycemic syndrome, a variety of inquiries into the metabolic status have been made. At other times, the suggestion that it might be a petit mal variant has led to extensive neurologic investigation, electro-encephalography and even pneumoencephalography. In fact, any number of leads have been followed but the important one of determining the functioning psychologic status of the patient. Is he fearful, worried, anxious, nervous, concerned, frightened, troubled, bothered or upset about something? This simple cue often elicits a classical description of some emotional conflict. The anxiety which results is reacted to defensively by physiologic means, but like so many neurotic defenses it proves unsuccessful and itself creates more problems than it solves. Obviously, the need to be aware of the fact that anxiety can be discharged in this fashion is the key to setting the stage for the solution.

There is another aspect of anxiety which is overlooked frequently. Merely recognizing a certain train of signs and symptoms as the physiologic expression of anxiety and communicating this observation to the patient are not enough. Just to rule out the possibility of organic disease is not enough. The patient at this point is not possessed of the capacity to solve his basic conflict with any greater skill or more likelihood of success than he was in the beginning. What is required now is a patient inquiry into the nature of the emotional conflict, and while this is in progress the physician's regimen is one which is designed to support, to reassure, to encourage and to provide the opportunity for the patient to see his problem a little more objectively, to face his mixed feelings about himself and the important persons in his life and to be able to work through his doubts and his dependence. Unhappily, this takes time, for which there is no substitute. But by the same token, the rewards for time so spent are great.

Long before the era of psychosomatic medicine Nietzsche pointed out that "We think with our bodies." The manner in which thoughts are transmuted is not as alchemical as some would think. Man is a symbol-dealing animal whose integrated behavior depends upon his capacity to bring the past and the future into the psychologic present. This unique ability makes all of us vulnerable to anxiety. The situations and events with which we are confronted in daily living therefore mean more to us than they would appear to mean on the surface. Past experiences in this way confer confidence or apprehension sometimes out of all proportion. Just how much and what form this disproportion takes can be told only by the person himself. It is for this reason that the patient holds the solution of his conflicts in his own hands. What he has been and what he has experienced has most to do with what he is, and this cannot be told except by giving him an opportunity to talk about it. It is the physician's job to set the stage which makes such talking both possible and profitable.

The ability to deal with things in symbols vastly increases the meaning of commonplace events, and can convert one man's meat into another man's poison. This conversion is the heart of the so-called dynamics of emotion. Obviously it has two parts. The psychologic part is a product of all that has happened—big things and little things, and based upon this there is acquired gradually a set of attitudes and values. It is the essence of the meaning of these symbols. Inasmuch as the patient's emotions are both his way of life and a reflection of it, seen in this light, the difference between the normal, the psychoneurotic and the psychotic adjustment is a matter of endowment, past experience and present resources. In short, the kind of defenses available to the patient determine what sort of an adjustment he is able to make. This is the point where his immunity or vulnerability to anxiety triggers different defenses.

Everyone has the potential of anxiety. We differ from each other in the way we bind or handle our anxieties. When it gets cold enough, everyone turns up his coat collar. In the same way, when stress is sufficiently taxing, everyone reacts with anxiety. The discomfort of this experience is of such an order that it has to be assuaged in some way. Mechanisms or defenses against the conscious experience of anxiety are merely cumbersome ways of attempting to explain the complex interaction of physical and emotional events which then take place.

Man lives on two environmental fronts and is buffeted all his life by their changes. The internal environment is a metabolic, physiologic one made up of buffer systems and enzymes and hormones

(Continued on Page 1281)

FACTS AND FALLACIES IN THERAPY

NORMAN JOHNSON, M.D.
Minneapolis, Minnesota

THERAPY of the neuroses may be approached with a hopeful note. Most of the disablement is reversible, which is not so often true when cancer is discovered or polio has been diagnosed. The first consideration for the physician is to fix in his mind that he is dealing with a *disease,* which can grip the patient as assuredly as can any infectious process. Where the patient asking for help is found to be ill because of the toxins of a bacterial invasion, the indications are clear enough. We combat symptoms, but primarily we strive to eliminate the invader. Too often this approach is not the one we use in treating the neuroses, although this disease is very similar in its effect upon the human organism.

A circulating toxin may produce manifestations in the skin, upset the gastrointestinal tract, alter the heart action, vary the respiratory function, create a delirium, impair muscle or kidney function, and produce widespread dislocation within the organism. The effect of "nervous tension" (which is the circulating toxin in the disease we call "neurosis") likewise can create abnormal responses in all of these same functions. Therapy is aimed at removing cause—i.e., the presence of a persistent compelling force, originating in the emotional realm. Like a tune which sings in the head, it is difficult to be rid of an emotional force, once it becomes established. When any strong feeling occupies the seat of the soul, it dictates the thinking, the mood, and the organic behavior. It does not relent by force of will; nor can it be unseated by a process of reason and logic. Yet everyone seems to believe that these agencies, if appealed to, can turn the balance.

We have under consideration today only those cases which are marginal and can be handled in any office if the doctor knows this disease as well as he knows many of the rarer entities; and if he has acquired a bit of wisdom in effective therapy. The prime indication is to help the patient to escape from persistent, compelling overstimulation, originating in some emotion—usually a form of anger or fear. We purposely omit from this discussion a small percentage of neuroses which exhibit profound exhaustion, and complete physical and spiritual collapse. My remarks are concerned only with that large group of persons whose behavior, thinking, and physical responses have become abnormal through heightened "nervous tension."

The stimulus of tension in small quantities can be of great advantage to man. But when the tension becomes great and remains constant—even during sleep—the organism exhibits abnormal activity in each of its realms of response. Remembering that repetition creates reflex action, or habit, it should be apparent that time is an element. Remedy is simple in direct proportion to the period of habit formation. Any group of cells which has been kept hyperexcitable for any length of time becomes trained to a perverted performance. We may cite hiccough, or uncontrolled laughter, as an example. More often one sees diarrhea, or headache, or asthma, or dermatitis, or pain.

By fear, I mean fright, apprehension, worry, concern, or any other ramification of the feeling that there is an unwanted consequence from which I need to escape. By anger, I mean all of its subdivisions—rage, hostility, resentment, rebellion, impatience. Both of these basic emotions are purposeful in defense. We are here concerned with their presence in too great amount, or in situations where they are not appropriate and cannot be useful in protecting the organism. Presence of these feelings promotes tension. Tension stimulates. The resultant attitude, if the process is constantly applied for a time, is one we shall call "resistance." The need to resist becomes habitual and remains ever-present. It is evidenced by too-great muscle tonus, by loss of adaptability, and by reactions which are mechanistic rather than the product of choice. The opposite of resistance is a spirit of abandon. Our aim in therapy is to enable the patient to break with his habit of being at all times inflexibly resistant. He has many "go" buttons which keep

---

Read in the Symposium on Marginal Neuroses in Everyday Practice at the centennial meeting of the Minnesota State Medical Association, Saint Paul, Minnesota, May 19, 1953.

him too ready for action. He is in a state of urgency about all things. He has lost his power of choice to come to a full stop and has become a puppet operating by whatever pulls the string. What he needs is a "stop" button. He needs to recreate the spirit of abandon.

Some do's and don't's.—It is silly to tell a patient to go home and stop worrying. If he could do this, he would not be in your office. Might as well tell him to go home and lower his blood urea nitrogen.

Never tell a patient that his pain or other symptom is imaginary. It brands you as an ignoramus and adds anger to his problem. Neither is helpful. Vomiting of functional origin leaves *real* material in the emesis basin. Fear may augment pain, or provide the stimulus for pain, or cause the patient to exaggerate the importance of the pain. But pain is the result of stimulation of some mechanism and is real, as any of you who develop a headache from fatigue can testify.

From the past we get certain ideas of therapy which include (1) sedative pills; (2) reassurance, and (3) surgical mutilation.

1. Sedation causes a symptom relief—like morphine in appendicitis. It is not a therapy. It often adds serious problems to the case and, by suggestion, subtracts from the patient's self-confidence and dependency upon his own controls for management.

2. Reassurance of the Pollyanna type does not help. The patient is no fool. He realizes things are working incorrectly within him and knows that he cannot profit by looking away. Assurance is something the physician endeavors to re-create in the patient. He is more likely to win success by the artful use of suggestion than by didactic teaching. Simple explanations of the nature of the illness and of the method of relief, carry reassurance; but more often because of the manner in which the facts are spoken than the verbiage itself. Any doctor can, by suggestion, create a neurosis in his patient ("you have a heart murmur which I think is unimportant, but—"). By reversing his usage of suggestion, he can help to unseat fear and anger from the driver's seat. And that is his therapeutic goal.

3. We see less therapy by mutilation than formerly. Not in a long time have I met a middle-aged woman with eight or ten abdominal incisions. Surgery *can* relieve complaints by extirpation of an offending organ. But it can also relieve through the establishment of faith and the restoration of confidence. It a patient believes that his abdominal pain was caused by a "chronic appendix," and that organ is removed, what then remains to be feared? His hazard is over and, through suggestion, his faith hath made him whole. The old dictum—"I'll take chronic appendicitis and you take the field"—now retreats to its place backstage, beside clitoridectomy and oöphorectomy for "chronic female complaints."

False concepts make progress difficult. The earth seemed flat to those living on its surface some 500 years ago. Holding to this fallacy bothered no one until navigation extended beyond the horizons. We hold firm to two false concepts which add great difficulty to otherwise sound efforts in therapy of the neuroses. The first is the habit of thought which insists on identifying the output, or product, of the organ called "brain" with the proud possessor thereof. Thus, the responses of my brain become synonymous with "me." We do not so regard the functions of our hearts or our livers. When they misbehave, we view them with objectivity, as organs needing readjustment. We are not embarrassed to find them out of order. But because we do exercise voluntary control over a small segment of the brain's total operation, we infer that all the rest is under our control and represents "us." Actually, a far greater portion of the total response in that organ occurs at an unconscious level; a great deal more belongs to the level of the reflex, the appetites, and whatever it is which we once called instinct. All of which brings a feeling of contempt (and in the victim, a feeling of self-condemnation) for anything short of perfection in the brain's operating responses. It is similar to the stigma attached to infectious tuberculosis a few years back. Families needed to whisper about a case in some relative.

Doctors do not escape from any attitude so universally accepted. And when I fall back into this point of view, I am apt to say to my patient "*You* did this; *you* thought that; *you* felt so and so." This reaffirms the false belief in the mind of the patient, whose natural response to any idea of blame or censure is to recoil from it. To become defensive automatically increases resistance, which defeats my therapeutic purpose. I might better have said "this happened *in* you, or *to* you; or *your brain* is doing this." The problem of treatment of a neurosis is similar in method to the problem of correcting bad grammar; conscious striving for replacement of an incorrect reflex action with a more correct technique. In so doing, we ourselves must watch our own technically grammatical errors. Knowledge is *not* power. Only the ability to convert that knowledge into use is power, as you golfers well know.

The second false concept has been mentioned. Almost all of us expect that by will-power, we can displace or change our strong feelings. The will can inhibit, and that process can be successful in hiding our feelings from the world, or preventing the action which is natural to such emotion. But the will does not alter the presence of that emotion. Nor can that emotion be unseated by the exhibition of reason or logic. If it could so happen, the patient would not be ill. To remember this will save a great many futile attempts to persuade a sick person to terminate that illness because it is not reasonable to harbor it. We do not tell the paralytic that all he needs is to move his muscles, or the diabetic to lower his blood sugar. Treatment here goes better if we eliminate didactic preachments and scrap scholasticism.

There is a vast difference in the significance of "I will" and "I am willing." Many of the patients are ill because they are continuously meeting life with "I will" but could not make themselves "willing." And there, in a nut shell, lies the difference between the diseasy type of response, made with inhibition dominant, and the easy flow of response toward accomplishment of a desired action when a harmonious feeling (force) supplies the energy to support it. To use the will to correct the inappropriate discord between action and feeling is to invite illness.

The object of therapy is to break a state of habitual resistance, and thereby to permit body and mind to become unresponsive rather than hyperexcitable. It is usually a matter of reprocessing emotional habits which are in fact conditioned reflexes. (Pavlov taught us these mechanisms in animals.) Keeping the mechanistic and compelling force of a strong feeling in mind, attack the illness objectively. You have two measures to use which yield successes.

In our country, psychological training is rather completely dependent upon the Teutonic researchers, beginning with Freud. Much of our understanding of psychic mechanisms is due to that teaching. Being Teutonic, it is ponderous, cumbersome, and in the matter of therapy, impractical for our purposes. Little seems to be known of the French school of thought; one seldom finds in the books or class-rooms, reference to Dubois or Dejerine. Yet Dejerine is one who seems to have grasped the fact that emotion can be altered by the power of suggestion. Emotions seated in the soul dictate, by their suggestion, to intellect, mood, and bodily cells, thereby producing response in these realms. The fact that a feeling is a perversion does not matter. Our various realms of response must try to match with whatever would be an appropriate reaction to that feeling. If one wishes a natural flow of response instead of a perverted one, he needs change the feeling to one more helpful in meeting the events of life. Our role as physician is to aid the patient in making this exchange. This art of suggestion is being well-exploited by advertising men, propagandists, evangelists, and rabble-rousers. Anything so potent in their hands deserves more "scientific" exploration toward usage in therapeutic techniques. We sorely need some weapon to use against a disease which paralyzes the capacity to choose reaction in reason. Already, dentists and obstetricians have found the art useful.

A Boston internist, Dr. Joseph H. Pratt, has for twenty-five years carried on, both in private and dispensary practice (by group therapy), an admirable demonstration of the effectiveness of Dejerine's method. His artful utilization of the principles of suggestion in group therapy has resulted in 80-90 per cent successes on a series of nearly 4,000 cases. By comparison with efforts in the usual handling of such cases, this figure is astounding. Yet his excellent pioneer effort is not widely followed and treatment of these patients muddles along. One of the few seedlings in the United States exists here in Saint Paul, being splendidly carried on by Dr. Harvey Beek.

The art of suggestion is a useful method of teaching in all forms of education. If I wish to train a dog to perform a new trick, I may explain to him in English what I want him to do. Or I may speak in Chinese. It makes little difference to the dog. When the trick has been learned, I will find that I have projected my ideas into his brain chiefly through the mechanism of suggestion. Your own ingenuity can supply the ways and means of handling the marginal neuroses. I have had a brilliant result by conjuring up a typical Pavlov reprocessing technique and applying it to a situation where reflex conditioning had altered a previous response. The patient actually tricked the brain into a return to its former habits.

Everywhere in the animal kingdom, there appears to be a natural reaction that is pertinent to our discussion. Coercion of any kind tends to excite resistance. Since our goal in therapy is to break habitual resistance, the use of an intellectual coercion is a poor weapon and is doomed to failure. Which may explain the phenomenon that college professors are very difficult cases to treat. They believe that an intellectual dictatorship exists in brains; but in the time of their own need, they cannot coerce their animal passions with that weapon. To quote Dejerine, "Blessed are the simple-hearted for they shall be cured."

The second successful agency in treatment is one which can be taught didactically. It utilizes a habit common to all, i.e., the ability to contract or relax skeletal musculature voluntarily. There are several simple techniques for relaxation which can be taught to a patient who is eager to understand his disease. And this is a necessary element in the therapy of neuroses because one needs to enlist the patient's interest immediately in some useful device which is objective. It is the equivalent of coaching a diabetic in his dietary needs. Besides the value it has in combatting the course of the neuroses, it has additional value in weaning the patient's attention away from his introspective habit and directing it upon a technique which can deliver him from his illness. The relaxing exercise can easily be rehearsed three times a day. In a few weeks, there develops a voluntary skill in bringing the physical body into a state of muscular hypotonus. Concurrently, there is practice in bringing the thinking processes to a full stop. After it is learned, this state of inertia can be self-dictated to the organism in a very few minutes. The benefits are manifold. The body becomes still and quiet, not because it is forcibly prevented from motion, but because all urge to react has been drained off. The index of the degree of release is a sensation. Patients learning this tactic discover for the first time in life what it feels like to be truly quiescent. In this state, the habit of being resistant is broken; there is improvement in the ability to concentrate and a loss of symptoms. By suggestion, an aura of peaceful serenity is attained, and rest, previously impossible, can be had. The habit of hyperexcitability is reprocessed and replaced with a willingness to be inactive. And as this simple technical skill improves, the power of making a choice in reason returns. Where voluntary option in response has existed, there is restoration of that option. Physical symptoms alleviate. In fact, I have seen persons well-versed in this skill undergo a complete personality change in thirty minutes. The change in them is dramatic and the relief of their torment parallels that of novocaine injections for relief of pain. Hippocrates seemed to understand these matters for he said, "As long as the brain is at rest, man enjoys his reason."

To enjoy means to "find joy in." There is no worse torment than to realize that one possesses his capacity to reason, needs to use it, but cannot switch it into the circuit. That knowledge alone will produce fear. We spend hundreds of hours in efforts to restore motion to paralyzed muscles. What prevents us from equivalent effort in trying to teach rest to an overactive brain?

CHICAGO PAPER SUPPORTS AMA POSITION

The Chicago Tribune, one of the most powerful newspapers in the country, recently upheld, editorially, the American Medical Association's position on veterans' medical care.

"Dr. Edward J. McCormick, president of the American Medical Association, is on firm ground in calling for reexamination of the extent of free medical care to be dispensed by the veterans administration," the *Tribune* said, adding:

"A racket has sprung up in the provision for extending medical care to nonservice connected disabilities when VA facilities are available to handle such cases. A year ago 65 per cent of the patients in VA hospitals fell into this category. During the year September 1, 1951, to August 31, 1952, 85 per cent of the 500,000 veterans treated were patients with nonservice connected disabilities.

"Dr. McCormick reports that there are now twenty million veterans in civilian life and the number is increasing by a million annually. The expense of any such operation would be staggering, and the loss of liberty apparent.

"It is time to call a halt to this progression and to impress upon Americans that while they may be veterans they are citizens first, that their responsibility is to take care of their own requirements instead of trying to shunt them off on their fellow citizens and that in the long run there can be no benefit even if they seem to be ahead of the game in getting something from the government.' The government is themselves, and they pay for it. Their pay will increase in proportion, if these exactions continue, precisely as we approach the point where this becomes a nation of veterans."

SOCIAL SECURITY FOR PHYSICIANS

CARL B. DRAKE, M.D.
Saint Paul, Minnesota

WHEN Congress convenes in January it will resume its consideration of bills which failed to be acted upon during the first session of the 83rd Congress. In November the House Subcommittee resumed its study of social security and its extension to professional groups including physicians. The issue is likely to be a lively one, and physicians should post themselves on the pros and cons so as to know how they stand on being included in the social security program.

House Bill H.R. 6812, which was submitted on August 3 will, if passed, make it mandatory for professional men including physicians, residents, interns, dentists, veterinarians, lawyers, architects and farmers who earn $400 or more a year, to come under social security. Mandatory coverage also is provided for farm workers who earn $50 or more, in a calendar quarter from one employer. Several other segments of the population totaling about 4 million, including state and local government employes now enrolled in retirement systems and ministers of the gospel, would be offered coverage on a voluntary basis. The proposed extension would cover about 10 million citizens not covered at the present time.

Mr. Reed, who introduced this bill at the request of the Eisenhower administration, has stated that his action is not to be interpreted as an endorsement of the plan. It apparently has been introduced in order to bring the matter of extension of Social Security up for consideration.

The medical profession went on record as opposed to the extension of social security to the self-employed group including physicians in 1949, when the AMA House of Delegates passed such a resolution.† Further action will probably be taken in December but was not known as this article went to press. Also on record as opposed to the extension of social security to their groups, are the American Dental Association and the American Bar Association. The AMA proposes instead that self-employed persons be allowed to defer income tax payments on a portion of their earnings which would be paid into restricted annuity plans.

As perhaps most people know, Old Age and Survivors' Insurance (OASI) provides for a tax on income, paid half by the employe and half by the employer, or, in the case of the self-employed, a tax at a rate higher than that paid by an employe but not equal to the sum of that paid by employe and employer. In return, the worker is entitled to collect a certain amount each month, depending on the number and age of his dependents upon his retirement at the age of sixty-five, providing he does not earn over $75 a month. In case of death the surviving dependent spouse, providing she or he as the case may be is sixty-five or over, is entitled to collect a certain amount each month (providing too that the survivor does not earn over $75 a month). If the worker leaves a widow alone, and she is under the age of sixty-five, she receives nothing. In case, however, a worker leaves a child alone, or one or more children under eighteen in addition to a widow, certain monthly payments are due, to those earning less than $75 a month.

How would OASI, extended to include the medical profession, affect the profession? Most physicians are self-employed and earn over $300 a month—the maximum amount on which anyone pays a tax. At the present rate of 2¼ per cent he would pay $81.00 a year. But beginning with the year 1954, the tax will be 3 per cent; in 1960, 3¾ per cent; in 1965, 4½ per cent and from 1970 on, 4⅞ per cent. From 1970 on he will pay $175.50 a year. A physician who begins paying the tax in 1970 at the age of thirty, will by the age of sixty-five have paid in the sum of $6,142.50, over the period of thirty-five years.

If OASI is extended to physicians, their benefits will be as follows. If the physician retires at the age of sixty-five, he will receive $85 a month in the nature of an annuity insurance (55 per cent of the first $100 of his income and 15 per cent of the $200 making up the $300 of his income). When his wife also becomes sixty-five, his monthly government check will be $127.50. If he dies his widow, over 65, will receive $63.75 monthly. If he has a wife and child under eighteen (not likely), his monthly check will be

---

†Resolution on Social Security J.A.M.A. 140:693 (June 25) 1949 and 140:791 (July 2) 1949.

$168.75. If he earns over $75 a month he will receive nothing from the government. At the age of seventy-five he may earn as much as he can without jeopardizing his insurance.

How does this compare with an annuity policy obtainable from a life insurance company? A policy taken out at the age of thirty with a yearly premium of $175.00 will bring a return of $64.26 a month at the age of sixty-five or $48.10 a month with a paid up life insurance policy of $3,130 with no ifs, ands or buts.

Most physicians practice a number of years after reaching the age of sixty-five, and earn much more than $75 a month. The median age at retirement for the doctors is 74. Most would prefer to continue practice rather than accept a small check each month from the government and limit their practice to $75.00 a month. The limitation of $75.00 a month would simply place a premium on dishonesty to which some physicians, we are sorry to state, might yield. OASI applied to physicians would thus tend, too, to decrease the number of physicians in practice, of which some think there is already a scarcity.

As far as the Survivor's Benefit portion of a physician's Social Security is concerned, a physician's widow, if childless, will receive nothing until she reaches the age of sixty-five. Then she will receive $63.75 a month providing she does not earn over $75.00 a month. Again this places a premium on dishonesty and encourages laziness. A child under eighteen will receive the same monthly allowance as the widow over sixty-five; a widow and child $127.50 a month, and a widow and two or more children, $168.75 a month (the maximum allowance). A lump sum of $255 at death would also be obtainable.

One provision of OASI which ignores insurance actuarial experience, is the ability to take advantage of the retirement benefits after contributing for only eighteen months. As Dickinson* has so clearly stated the situation: "An argument frequently used to attempt to persuade older professional persons to urge extension of the act is a so-called bargain feature; for example, to take an extreme case, it is pointed out that a person approaching the age of sixty-five can pay a minimum of $121.50 during the last eighteen months and receive a social security pension of $80 per month for himself at age sixty-five, plus a monthly pension of $40 for his wife at age sixty-five; moreover, the wife's pension would be increased to $60 per month if she outlives her husband. Actuaries estimate that the single premiums at age sixty-five for an insurance company annuity paying these benefits would be about $23,000. Monthly pensions of $120 received once or twice would exceed the minimum cost. The attractiveness of this lure is greatly lessened when a professional man approaching sixty-five asks himself: 'Who is going to pay for my pension under the Social Security Act if I do not pay for it?' The obvious answer is that the balance of the cost must be paid by the working population, by the profession's younger colleagues, by their neighbors, by their children, and perhaps by their children's children. This is a moral question for all those approaching sixty-five who are considering the desirability of coming under the Social Security Act."

This provision of the Social Security Act makes it possible for an elderly immigrant couple to take out citizenship papers, work for eighteen months, and receive substantial checks from the government the rest of their lives, although they had contributed very little during those eighteen months. Another bill presently before Congress even suggests that all citizens be covered without proof of previous income! Surely this is a country overflowing with generosity.

Of course, the whole philosophy of Social Security is to force people to provide for the disabilities of old age and for dependents in case of death. It is assumed that they cannot or will not provide security of this sort for themselves. This is true of a certain segment of the population, but OASI forces those who can and wish to purchase insurance to meet their special needs to pay a tax to provide coverage not of their choosing. If the funds provided by the tax are not sufficient to meet the guaranteed insurance payments, other taxes will meet the deficit. It should be remembered that the employer contributes as much as the employe towards this fund, and of course passes on the cost to the price of his product—an inflationary factor.

Attention should be called to the fact that the federal government has gone into the insurance business on a large scale, collecting billions of dollars yearly in competition with private insurance companies. One excuse for such a venture is that the government can do this better than the private insurance companies. Have they proven this to be true?

---

*Dickinson, Frank G.: Pension for physicians. J.A.M.A., 148:1279, (April 12) 1952.

When an insurance company collects premiums from its policy holders, such funds are in the nature of trust funds to be used for the fulfillment of its contracts. What happens to the billions of dollars collected by Social Security? Nonnegotiable interest bearing United States government bonds are exchanged for the cash collected and the cash is spent. The taxpayer not only pays in his money to the Social Security fund, but he pays interest on the government bonds which have been substituted. As a result of this questionable procedure, where will the money come from to meet the Social Security obligations if not from further taxation?

By the end of February 1948 over twenty-one billions of dollars had been collected to meet the obligations of the OASI program. With the increase in tax rates which begins in 1954 and more than doubles by 1970 the OASI fund will reach astronomical figures and will greatly aggravate the problem of the temporary disposition of such a huge sum.

From a standpoint of dollars and cents OASI would be a good buy for the young physician and for the elderly one. Private insurance cannot compete with the survivors and retirement benefits offered by Social Security, for it is estimated that the cost for the same coverage would be twice that paid by the physician for Social Security coverage from 1970 on. If the policies offered by private insurance companies are actuarily sound this means that tax funds in addition to those paid under Social Security will be called upon to meet OASI payments.

For the physician in the age group somewhere between the young and old, OASI does not offer as attractive an investment. His widow is not likely to collect for children under the age of eighteen, and she can't collect until she reaches the age of sixty-five, unless she has one or more children under the age of eighteen. Thus the so-called Social Security insurance provides nothing for the widow in a fairly large group until she attains the age of sixty-five, which is not very far from her life expectancy. Furthermore OASI insurance has no cash or loan value similar to private insurance.

The retirement features as far as the physician is concerned (and this applies to other professional groups as well) is not too inviting. As we have said, most physicians keep on practicing a considerable number of years beyond the age of sixty-five, and earn more than the stipulated $75 a month; above which income, he sacrifices his right to collect his check from OASI of $85 a month, if a widower, or $127.50 a month if blessed with a wife over sixty-five years of age. As has been stated he is not likely at the age of sixty-five to have children under the age of eighteen for which he would be entitled to collect more.

What should be the attitude of the physician towards the proposal to add the medical profession to those covered by Social Security?

Some physicians think that the profession should be permitted to share in the Social Security program inasmuch as they at present are contributing, through other taxation, to make up deficits in the Social Security program.

Others believe that OASI does not suit their needs well and contains too many ifs, ands and buts, which might make their investment in it a total loss. Some would much prefer to purchase annuity and life insurance of their own choosing which would provide them with a certain, though smaller monthly return, not dependent on their earnings after the age of sixty-five, or the age of their wife or children.

If the Reed-Keogh bill, now before Congress and backed by the AMA, is passed, the physician, and other self-employed in the professional groups, will be enabled to postpone the payment of income tax on a certain amount of their incomes invested in annuity insurance during their highest earning years when they are in their highest income tax brackets. They will be taxed on their annuity returns when their incomes are smaller. It is felt that such a law would constitute a just relief for the profession whose years of greatest productivity are limited to a comparatively brief span when they are in the higher brackets from an income-tax standpoint in comparison with other incomes.

Note. The ideas expressed in this article are those of the author and do not necessarily represent those of the Minnesota State Medical Association.

BECKER COUNTY BLOOD BANK

C. W. MOBERG, M.D.
Detroit Lakes, Minnesota

THE USE of whole blood and blood derivatives is now accepted as the procedure of choice for the treatment of medical emergencies due to hemorrhage and shock. In addition, blood products have first call for supportive therapy in many surgical procedures as well as for serious debilitating illnesses. In many cases their use is a life-saving measure. Consequently, the modern medical and surgical services require that blood and plasma shall be available at all times.

Medical emergencies occur in rural areas as well as in large metropolitan centers. Therefore, the rural physician should have at his disposal blood and plasma in order to enable him to treat these emergencies properly. A community which does not have an adequate blood transfusion program must be considered in arrears of present-day medical progress. It is our opinion that every community, even though its hospital may be small, should and can have on hand an adequate supply of plasma and a moderate amount of blood in order to be able to cope with medical emergencies which require transfusions and supportive treatment. Furthermore, we have a strong conviction that a community with hospital facilities can operate its own blood bank.

In 1942, a medical emergency which occurred in our hospital approached catastrophe because we were wanting in the necessary blood and plasma for immediate use. This experience proved to be the stimulus which brought forth the Becker County Blood Bank. We are happy to report that this blood bank has served the community well during these intervening eleven years. Although a paper has appeared[2] describing the first early adoption of the principles of this program in another community, nevertheless our program differs in several important respects from the one reported earlier, and it has been so successful that we have decided to report the details of this program so that our experience may be available to others working with similar problems.

Geographically and industrially, we are a rural agricultural area. Becker County has a population of approximately 27,000 people. Detroit Lakes, which is the county seat, has a population of 6,000 and serves as the medical center for the area. Here is located the only hospital in the county. St. Mary's Hospital is modern in every detail; it has sixty beds and fifteen bassinets; it also serves as the headquarters for our blood bank. The hospital administration, the doctors of the community, and the citizens have given our blood bank their wholehearted co-operation at all times.

In order to be successful, a transfusion service must provide the following:

1. *Personnel.*—The hospital medical technologist must be skilled in the procedures necessary for standard blood grouping, Rh determinations, and compatability tests. She must have an understanding of sensitization phenomena and be able to carry out the procedures for detecting sensitization. She must be skilled in the technique of vena puncture so as to be able to secure blood products of high quality with minimum discomfort to the donor. If the technician is not competent for this work, additional training may be acquired speedily at proper teaching centers. This technologist can do much of the executive work necessary in operating a community blood bank.

2. *Equipment.*—Proper equipment is essential for an efficient transfusion service. In addition to the standard equipment needed for laboratory blood grouping procedures, a refrigeration unit is of utmost importance for proper cooling and storage of blood. There are many standard refrigerators which are satisfactory. Vacuum bottles together with donor drawing sets and dispensing sets for the recipient are commercially available for all needs. It is highly desirable to house the Blood Bank in a separate room, or rooms, in the hospital, so that these are always ready if blood must be drawn immediately for an emergency. Thus the blood bank facilities are centralized for purposes of drawing and storage of blood and plasma. Drawing tables, desk, et cetera, may be made or acquired to meet the specific needs of the blood bank. Proper record forms can usually be printed locally or secured from stock printers. Proper shipping containers are

essential if blood is to be transported. It is not feasible for a small hospital to provide laboratory equipment and facilities for every type of analysis of transfusion problems, Rh antibody titrations, et cetera. These services are better obtained from a larger blood bank laboratory with which a small hospital bank should be affiliated.

3. *Adequate Donor Supply.*—The efficient transfusion service must be able to meet the community needs at all times via an adequate donor supply. We have a self-sufficient supply via a membership plan which will be discussed more in detail in a subsequent paragraph. The need generally falls into two categories—routine daily needs and emergency needs. Our routine daily needs are easily satisfied by maintaining a stock of 12 to 15 units of blood at all times. As will be pointed out later, this plan eliminates all losses due to outdating. Our inventory is maintained by calling in members for required blood deposits about every ten days. Emergency needs may mean either a rare type of blood or a situation which requires an unusually large amount of blood. In order to satisfy our needs for rare blood, we maintain a registry of members having rare blood types. These are held for emergency call only. They are never called for routine blood deposits. If an emergency demands large quantities of blood, we call the required number of members to come in for a blood deposit. Detroit Lakes members, by and large, are held in reserve for emergency drawings, whereas the distant and rural members are called for elective drawings.

4. *Plasma.*—Plasma reserve is always maintained on the surgical and obstetrical services for immediate need when desired. Plasma reserves could easily be expanded to include other key points of emergency treatment if necessary. But to date, we have had no demands beyond hospital services.

5. *Consultation Service.*—Consultation service is essential for the troublesome cases which appear in every transfusion service. It is not feasible for a rural bank to maintain facilities to solve all these problems. They can be satisfactorily solved by affiliation with a larger central blood bank laboratory offering consultation service for the following situations:

(a) Laboratory and clinical assistance in the study and analysis of difficult transfusion problems.

(b) To supply selected blood from its larger stock for use in difficult transfusion problems.

(c) To serve as supplementary source for rare types of blood.

(d) Transfusion reaction study especially involving rare group sensitization or confused situations.

(e) Consultation assistance in Rh determinations, Rh antibody titrations, direct and indirect Coombs tests on blood from the mother. The Coombs on newborn is done locally. It is always an emergency.

(f) Consultation laboratory service in genetic studies of parents and children where hemolytic disease of newborn has occurred.

(g) Periodic refresher study regarding new laboratory methods. We are affiliated with Minneapolis War Memorial Blood Bank. They have offered us splendid consultation assistance when special problems have occurred.

6. *Clearing House.*—Our affiliation with Minneapolis War Memorial Blood Bank has also given us a clearing house exchange service so that we can provide blood products to our members away from home. The details of this clearing house system have been described elsewhere.[3]

7. *Minimum Standards.*—The preparation of blood for transfusion is becoming a highly technical field. The many procedures evolved during the past twenty years of blood banking have been evaluated at a national level both by the American Association of Blood Banks[1] and by the National Institutes of Health.[5] The best or most acceptable of these different methods have been selected by these experts. This wealth of experience should and can be available to even the smallest rural blood bank. Affiliation of these small banks with a central bank permits the local technologist to supplement her reading with actual work experience in the central bank and permits examination of how these methods are being applied at the local bank by visitors from the central organization and even from the National Institutes of Health itself.

The Becker County Blood Bank had a meager beginning in 1942. Our initial equipment consisted of a refrigerator, a supply of vacuum type bottles, and aspirating equipment. Thirty-two members of the American Legion were sufficiently civic-minded to donate the initial stock of whole blood. Thereafter, our stock was maintained by a replacement of one unit of blood for each unit of blood or plasma received from the bank. If the blood were not used within sixteen days, then the supernatant plasma would be aspirated and pooled for processing. This plan provided us with a constant supply of plasma and cell suspensions but not a completely reliable stock of whole blood. However, this plan served us very well for approximately eight and a half years. During this period we averaged approximately 300 transfusions per year and reactions were so rare as to be almost negligible. The chief shortcoming of the plan was an occasional shortage of fresh blood in the bank due to delay in securing blood replacements. This was in part overcome by an index of donors which we maintained by keeping a record of all persons who were typed or who had given previous donations. By this means we developed a walking blood bank to support the regular bank, especially during emergencies. Occasionally we were embarrassed because the few people with rare types of blood were called upon too frequently.

In order to overcome the difficulty of maintaining an adequate and uniform number of donors, and in order to expand our blood transfusion services along more modern lines, we reorganized our blood bank services on a county-wide basis in 1951. By this reorganization we hoped to achieve the following improvements:

1. We aimed to enroll most of the people of our county as members in our blood bank system.
2. We aimed to relieve the individual recipients or the family from the necessity of finding blood donors during the period of distress accompanying the illness.
3. By affiliation with the Minneapolis War Memorial Blood Bank we hoped to modernize our transfusion program so that we could provide for our community all the services as outlined above.

The new plan is now in its second year of operation. It is working very satisfactorily. The people of our community like it, the hospital likes it, and the doctors like it. An essential part of the new system is the securing of a large membership in our blood bank system. The bank will supply blood and blood derivatives to its members in time of need. In exchange for this service, the member agrees to be a willing donor when the blood bank calls him. This constitutes a form of transfusion insurance available only to members of this system. Non-members must secure their own individual replacements. This phase of the new blood bank program is essentially a procurement procedure which: (1) provides a dependable uniform supply of blood controlled by the blood bank staff; (2) relieves members of scurrying for donors during the period of illness or accident; (3) provides community co-operative protection.

Organization

This phase of our present blood bank system was initiated at a meeting held in December, 1951. Fifteen carefully selected lay and professional persons representing every geographic area of our county were present at this organizational meeting. Included were Sister Bennett, Superintendent of St. Mary's Hospital; Sister Ann, our hospital technician; and myself as representative of the medical profession. The first order of business was a discussion of the need and the advantages of modernizing our blood bank service. This was followed by a demonstration of the equipment needed in drawing, processing, and administering blood. Prepared units of whole blood and plasma as well as empty stock bottles were shown. A brief outline of the necessary laboratory procedures was discussed. By this means the group was informed about the procedures that are necessary to prepare blood from a donor to a recipient. This feature was impressive because a lay person has no concept of the skill and effort involved in a blood transfusion. The exacting care and detail which was outlined emphasized the need for thoughtful planning and preparation so that emergencies could be handled safely.

The next order of business was to propose the establishment of a Becker County Blood Bank system and to create a board of directors of the persons present at this meeting. This was unanimously adopted. Election of officers followed immediately. Various committees were appointed from this newly constituted board to: (1) develop a constitution for the organization; (2) develop a plan of procedure to secure members and set a time for a membership drive; (3) make an appraisal of new equipment and record forms that were needed; and (4) establish fund-raising means to secure needed funds.

Weekly meetings were held until all details had been developed. By this time all the directors were thoroughly familiar with the operational details. They could speak with some authority in their respective communities. The plan was so devised that each geographic area had a director on the board. A constitution and by-laws were adopted. This document sets forth the statement of policy and principles which govern the blood bank.

Securing Members

It was decided to carry on a membership drive for a period of one month. Prior to this, extensive publicity was given by press and radio. A form letter was prepared and mailed to the president of each organization in the county. This served as an invitation to the members to join the blood bank. Many organizations participated actively in the membership drive. Blank membership cards were placed in all the banks and all the drug stores in the county through the co-operation of bankers and druggists. With these cards was placed a lithographed sheet outlining the benefits and coverage available to members. These facts were widely publicized during the membership drive. Much emphasis was placed on the constitutional provision that benefits would be available as soon as the membership reached 500. For any person securing membership after the month designated for the membership drive, there would be a waiting period of thirty days before the benefits of membership could be realized. During this membership drive, over 1,500 members enrolled as individuals or as heads of households. Since that time additional members have signed up so that at the time of this writing there is a membership of 2,150. Membership may be obtained by meeting the eligibility requirements and by signing the membership card. The member receives a portion of this card as evidence of his membership. The other part of the card is returned to the bank for filing. The family unit is used as the basis for membership. The family unit consists of husband and wife, all children through age eighteen, and all parents and grandparents over sixty years of age. The blood deposit for the membership may be pledged by any person in the family unit.

Classification and Filing

The master membership file is composed of all the membership cards filed in alphabetical order. From this report a registration book is prepared for each area director. This book lists all members in the director's geographic area. The book has entry pages for each blood type, e.g., Type A, AB, B, and O, with designations of Rh positive or Rh negative, and each member is listed in the proper section according to his blood type. If his type has not been determined, he is listed in the unclassified section of the book. As soon as his type is known, the name is transferred to the proper section. This book also records the dates when requests are made for blood donations and the date on which the blood deposit is actually made.

Procurement of Donors

Now, with the bank in full operation, when our technician wishes to increase the inventory of any type of blood, she calls one of the area directors and requests him to send in the stated number of donors of the specific blood types or a given number of ungrouped members. The area director then contacts the required number of members and requests them to make a blood deposit at the stated time. It is agreed that no member shall be called upon for additional donations until all other members have contributed. By this procedure the blood bank has an adequate and controlled supply of blood at all times. The recipient members are relieved entirely of the necessity of securing replacement donors at a time of emergency and stress or serious illness. At such times people usually have sufficient trouble without worrying about securing donors.

If blood is given to a non-member, he is required to provide a replacement donor or make a deposit of $35.00 for his unit of blood. If the blood is not replaced, this deposit is forfeited. We are not interested in the $35.00 fee, but this charge appears to be necessary as a means of encouraging non-member recipients to secure replacement donors and thus of maintaining an adequate blood balance in the bank. A service fee of $12.50 is charged each recipient. This fee covers all the services connected with preparing the blood and administering it to the patient.

Records and Forms

Accurate records are very important to a blood bank. The various record forms will not be recounted here; suffice it to say, our system embraces a detail accounting of the blood from the time a donor presents himself until the final disposition of the blood or plasma.

When a donor reports to make a blood deposit, a careful history is taken and recorded on a card. After the donation he is given a receipt card. The blood is given a number which is placed on the bottle, on the pilot tubes, and on all the forms. A card with number attached to the bottle of blood or plasma must follow the bottle until it is used. Then the card is appropriately filled out and returned to the blood bank so that the record for this particular unit may be completed and closed. (Various cards and other printed forms are available and can be obtained by writing to the Becker County Blood Bank.)

Comments

We have operated our blood bank for eleven years. During this time it has rendered a valuable service to our community. We have been largely self-sufficient and independent. We have always had blood and plasma available from our own supply. No serious transfusion problems have developed and transfusion reactions have been extremely rare. We have used whole blood, cell suspensions, and plasma transfusions for various specific needs. During the past two years we have given five replacement transfusions in severe erythroblastosis of the newborn. These have all been successful and without untoward reaction. We believe our plan is far superior for rural communities when compared to plans which propose mass donations of blood to be taken out of the community, part of which is to be returned at stated intervals. Plans which depend on mass donations from a given community may cause temporary donor depletion. The reliability of such programs is compromised by the uncertainties of weather, the uncertainties of transportation, and, at times, the capricious actions of other organizations. Consequently, there is much anxiety as to whether or not the blood will be available at the proper time in the proper amount. Such programs have no provision for emergency coverage and there is no attempt to improve technical standards or contribute to the safety of transfusions.

Since December, 1951, we have been affiliated with the Minneapolis War Memorial Blood Bank in Minneapolis, Minnesota. This has enabled us to give our community a more complete transfusion service. Specifically our benefits may be outlined as follows:

1. We maintain a blood deposit with Minneapolis War Memorial Blood Bank by shipping them our unused blood units when they are eight to ten days old. This procedure permits us to maintain a larger local inventory without loss due to outdating. At the same time, it establishes credit with the Minneapolis War Memorial Blood Bank which is available to our members who may be hospitalized in the Twin Cities or elsewhere away from home. These credits are also used to secure irradiated plasma and special rare bloods from Minneapolis.

2. Our affiliation affords an opportunity whereby our technicians may periodically visit the bank in Minneapolis to take a refresher study course so as to keep up to date on recent laboratory procedures. Dr. Matson, director of Minneapolis War Memorial Blood Bank, also visits us periodically to render assistance and keep us up to date.

3. We obtain valuable consultation service on transfusion problems which has been discussed previously.

4. It has given us an opportunity to secure liquid plasma, which has been aged, filtered, and irradiated.

At the time of this writing we have 2,150 registered members in our Becker County Blood Bank system. This represents single individuals or heads of households. Add to these the children under eighteen and the parents over sixty and one will note that a sizable group receives the benefits of membership. In addition we serve many non-members who provide their individual donors. We also provide blood to small hospitals in neighboring communities upon request. At present our membership is gradually increasing because people are so pleased with the service. It is anticipated that non-members will find it increasingly difficult to secure individual donors. This will, of course, bring additional members to our bank. Currently we are giving approximately 500 transfusions per year. At this rate with our

(Continued on Page 1264)

INGUINAL HERNIORRHAPHY

WESLEY G. SCHAEFER, M.D., F.A.C.S.
Minneapolis, Minnesota

IN THE repair of an inguinal hernia, be it indirect, potentially a congenital type of weakness, or direct, the objective is to reconstruct an abdominal wall that has been insufficiently secure and strong to withstand the stress and strain of intra-abdominal pressure. In the development of man, with the assumption of erect posture, greater pressure is exerted on the most dependent part of the abdominal cavity, thus resulting in the increase of pelvic or inguinal hernias, quadrupeds being predisposed to umbilical hernia.

Drye[2] demonstrated that the intra-abdominal pressure is about three times as great in the lower as compared with the upper abdomen. This determination was obtained using a rubber bag placed within the abdominal cavity. The bag was attached to a U manometer by a rubber catheter containing water as a medium. In the dependent abdominal wall of man, especially where traversed by blood vessels and nerves, weaknesses develop. Such sites are the passageways for the inguinal canal with the sealed or unsealed processus vaginalis that has allowed the spermatic cord to descend, the femoral and obturator sheaths with their vessels, nerves, or Petit's triangle, anterior and posterior vaginal walls, et cetera.

In my experience with frequently recurring inguinal hernia, mainly of the indirect type, I felt that improvement in repair was not being regularly obtained by the usual procedures. My experience in teaching surgical anatomy had given me ample opportunity to study the course of the inguinal canal and observe how its position favors herniation by intra-abdominal pressure. Changing its direction and obliterating the canal as much as is feasible, without interference with the viability of the cord is being advocated.

The internal inguinal ring is lateral to Hesselbach's triangle one-half inch above the inguinal ligament and lateral to the deep epigastric vessels. The cord, in passing through the abdominal wall during embryological development, pushed before it the peritoneum, subperitoneal fat, transversalis fascia, transversus muscle and fascia, internal oblique muscle and fascia. It lies, in its oblique course, beneath the aponeurosis of the external oblique muscle before making its exit at the external ring to become subcutaneous near the pubic tubercle. The greater frequency of indirect, as compared with direct inguinal hernia, is readily understood. The intact abdominal wall acts as an obstructing barrier to direct inguinal hernia.

In inguinal herniotomy, the usual oblique inguinal incision is made, exposing the aponeurosis of the external oblique muscle. The fascia is incised, starting at the external ring about one half inch above Poupart's ligament, carrying the incision two inches beyond the internal ring. The hernial sac is dissected free from the spermatic cord well down to the base and opened widely. The contents of the hernial sac are replaced into the abdominal cavity. The abdominal wall in Hesselbach's triangle is first palpated by inserting a finger through the sac. This is very important to note its strength and also to determine whether or not a direct hernia is present.

Two strands of chromic catgut No. 1 are carried through the neck of the sac into the peritoneal cavity, brought through the peritoneum and transversalis fascia and transversus and internal oblique muscles which pass through the wall 1.5 inches above the internal ring and lateral to the deep epigastric vessels, which can readily be palpated in passing the needle through the wall (Fig. 1). Holding the two strands with a forceps, the other ends are carried through at opposite sides at the base of the sac. These two sutures are tied at one side, and then carried around the sac and tied at the opposite side flush with the peritoneum (Fig. 2). The sac is severed just above where it is tied, and then the other ends of the suture are pulled taut, transfixing the stump within the peritoneal cavity (Fig. 3). This procedure eliminates a dimple that usually occurs in the peritoneal wall in either transfixing or leaving in place the stump under the transversus and internal oblique muscles (Fig. 4).

The following steps are carried out:

1. The relaxed internal ring is brought together by interrupted stitches in the transversalis fascia.
2. Further repair is the suturing of the con-

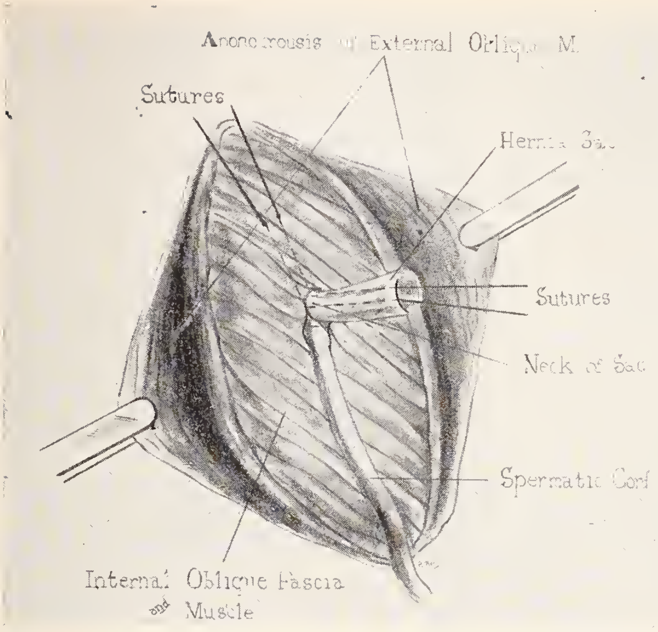

Aponeurosis of External Oblique M.
Sutures
Hernia Sac
Sutures
Neck of Sac
Spermatic Cord
Internal Oblique Fascia and Muscle

Fig. 1. The hernia sac is freed and opened with two strands of chromic cat gut carried through neck of sac into peritoneal cavity and then brought through peritoneum, transversalis fascia, transversus and internal oblique muscles, lateral to deep epigastric vessels, and about 1.5 inch above the internal ring.

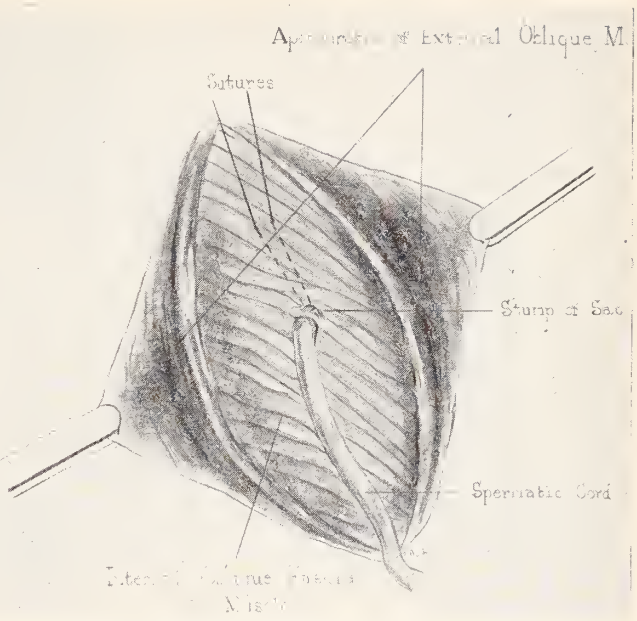

Aponeurosis of External Oblique M.
Sutures
Stump of Sac
Spermatic Cord

Fig. 2. The hernia sac is tied at the base and severed, ready to be drawn into peritoneal cavity by pulling on sutures that come through abdominal wall.

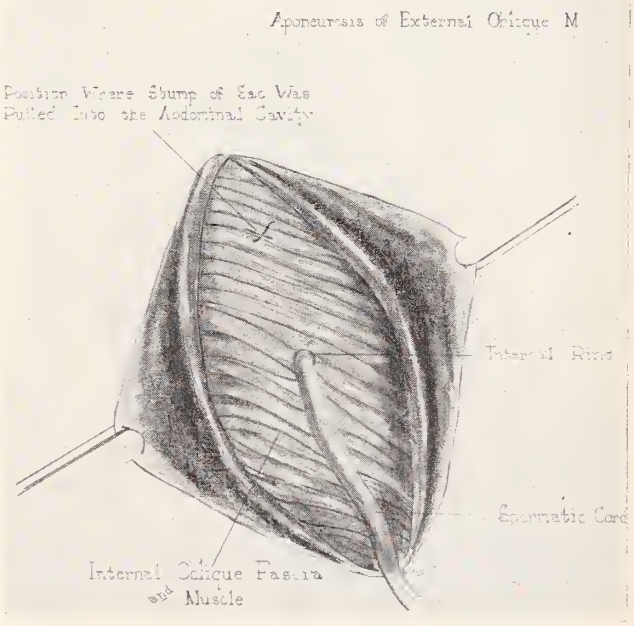

Aponeurosis of External Oblique M
Position Where Stump of Sac Was Pulled Into the Abdominal Cavity
Internal Ring
Spermatic Cord
Internal Oblique Fascia and Muscle

Fig. 3. Stump of sac has been anchored by tying sutures over internal oblique muscle.

joined tendon and transversalis fascia down to Cooper's ligament. In suturing these structures, it must be remembered that the obturator artery may arise from the inferior epigastric (accessory obturator) with associated pubic vessels. These vessels can readily be visualized by going through the transversalis fascia as it reflects down to Cooper's ligament. These vessels, especially the veins, may easily be pushed aside or tied off. Also, care must be taken to avoid the vascular sheath with its adjacent femoral vein. This can easily be hooked with the suturing needle.

3. The medial flap of the aponeurosis of the external oblique is sutured under the lateral flap by interrupted sutures, to inguinal ligament, starting near the pubic tubercle and carrying up 1.5 inches above the normal position of the internal ring. The spermatic cord is left outside; about one half inch is allowed for the cord, and stitches are carried on above the cord in similar fashion. The lateral flap is then sutured to the medial flap, thus overlapping the fascia (Fig. 5).

4. The fascia immediately around the cord is cut, allowing ample space for exit. Strangulation of the cord can be avoided if the little finger can be passed readily through the sutured aponeurosis (Fig. 6). The course of the inguinal canal has now been changed, making it shorter and having it pass cephalad rather than caudad. The rational for these few changes in the procedure has been suggested by the many recurrent indirect inguinal hernias encountered. They have all been through the canal, with no femoral hernia.

Discussion

The procedure has one purpose, to prevent indirect recurrence. The transfixing of the sac

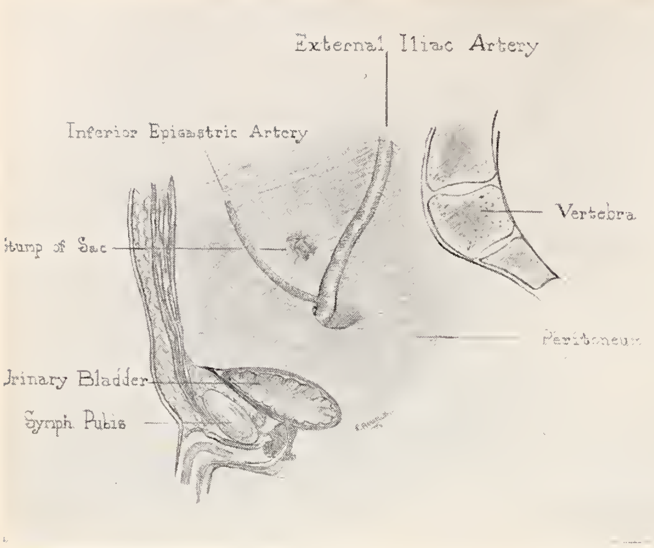

External Iliac Artery
Inferior Epigastric Artery
Stump of Sac
Vertebra
Peritoneum
Urinary Bladder
Symph. Pubis

Fig. 4. Stump of sac is shown anchored on anterior peritoneal wall.

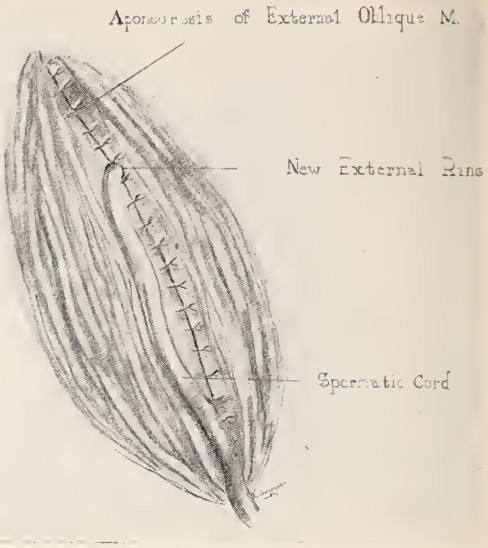

Aponeurosis of External Oblique M.
New External Ring
Spermatic Cord

Fig. 5. New position of external ring is shown with spermatic cord resting on aponeurosis of external oblique muscle.

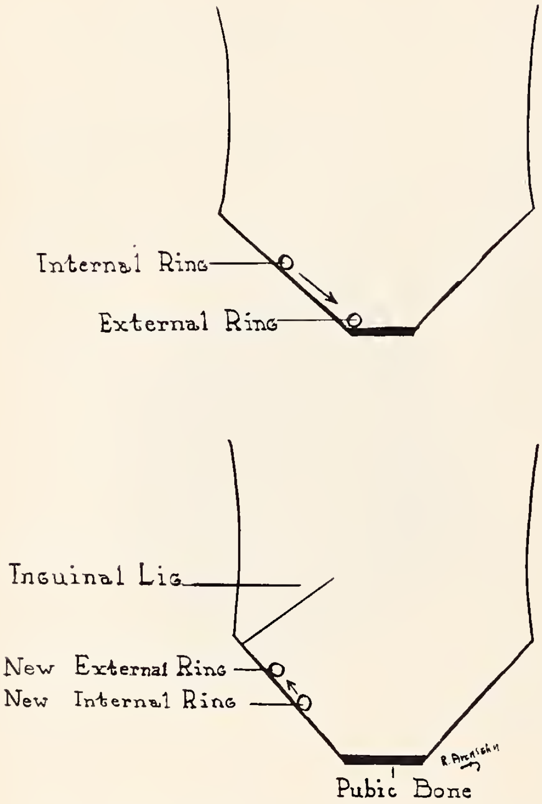

Internal Ring
External Ring
Inguinal Lig.
New External Ring
New Internal Ring
Pubic Bone

Fig. 6. Old and new course of inguinal canal is indicated.

may seem trivial, but it eliminates the dimple, the first potential weakness. Many ways of disposing of the stump have been tried. Marcy[7] advocated just high ligation. MacEwen[6] plugged the internal ring on its abdominal aspect with the rolled-up sac and sutured it to the ring. Wood[9] invaginated a part of the hernial sac, and closed the wall of the canal. Bassini[1] twisted the neck of the sac, tied and amputated. Halstead[4] closed the sac with quilted sutures through the peritoneum at a level about one and one half inches higher than the level of the sac. Furguson[3] was the first to transplant the sac under the transverse and internal oblique muscles. Halstead[5] also transfixed the stump of the sac under the muscles. The suturing together of the transversalis fascia about the internal ring is of the utmost importance since this ring is usually enlarged from the hernia. Similarly, medially the internal oblique, transversus muscles and transversalis fascia are decidedly relaxed. Suturing of the fascial tissue (conjoined tendon) to Cooper's ligament as employed by McVay[8] is especially good in the recurrent inguinal hernias in which the Poupart's ligament is stretched and frayed and is a poor anchor. But some cases are encountered where it is impossible to suture to Cooper's ligament due to the tension placed on the fascia. Above all, it is a fallacy to suture the muscles to the ligament. Muscles attached to a tendon fray out, and are of no strength-producing benefit. The advantage of transplanting the cord above the aponeurosis allows for closure of the fascia snugly below, and the most dependent external ring is changed to a higher level, and subjected to less dependent pressure.

Summary

In this series of seventy-six cases, using the outlined procedure, only one recurrent hernia has

(Continued on Page 1252)

INJECTION THERAPY OF VARICOSE VEINS USING SYLNASOL FOAM

H. A. ALEXANDER, M.D.
Minneapolis, Minnesota

THE INJECTION therapy of varicose veins, using part air and part liquid, is not new. R. R. Foote recommended soapy froth for superficial spider veins, in a book printed in 1949. McPheeters has been injecting foam into spider bursts for several years. Orback has been advocating his "air-block" technique for at least five years.

The method can be used with any of the soapy solutions such as Sylnasol (Searle), Sorocin (Merrill), or Sodium Morrhuate. It can also be used with the synthetic Sotradecol (Sodium Tetradecyl Sulphate, Wallace & Tiernan). Orback believes Sotradecol is the most effective sclerosing agent, and that it causes little or no allergic trouble. In my experience the allergic tendency is the same as with the soapy solutions, and the sclerosing action is not as uniform; most patients had very satisfactory results, but a few had violently excessive local reactions. I therefore prefer Sylnasol with its more uniform action.

The method is simple. The sclerosing agent is converted into foam by passing air through the liquid several times. A few drops of the liquid are thus converted into several cubic centimeters of foam, giving several advantages. (1) The economic advantage of using less material is the least important. (2) Allergic reaction depends partly on the amount of allergin injected; a few drops will cause less trouble than several cubic centimeters. (3) A slough can be produced by injecting sclerosing agent outside the vein, but one drop of Sylnasol mixed with air will seldom produce a slough.

I believe there is less discomfort to the patient because smaller needles and fewer skin punctures have to be made; also the use of the tourniquet can often be omitted, and many patients dread the tourniquet more than they do the needles. I believe there is less pigmentation of the skin. And the possibility of deep phlebitis is minimal because the sclerosing agent would have trouble getting into the deep vein.

But regardless of advantages, there are always two questions asked. First, "Does it work? How can a small amount of substance, as foam, destroy the vein better than a larger amount of the same substance in liquid form?" Obviously, the objective is destruction of the varicose vein. The portion of the sclerosing agent that comes in contact with the vein wall, is the only portion that does any good. A thin film of sclerosing agent against the intima, is all that is required. The portion of the liquid that mixes with the blood in the center of the vein, is wasted.

The second question is, "Is it safe? Can you inject air into the vein and not have trouble with air embolism?" Obviously, no intravenous injection is 100 per cent safe. One safety factor is the positive pressure in the saphenous veins, that makes Orback, Petretti, and others feel an air embolus is impossible. More important, I believe, is the fact that only 10 cc. or less, of air, in divided doses, is injected into a high segment of vein where it acts as a roadblock to the flow of blood. Even if the entire 10 cc. of air could somehow get into the circulation, it should cause no serious difficulty. The seriousness of an air embolus depends on the amount of air, the rate of injection, and the general condition of the patient. There are no statistics or average figures, and estimates vary; some authorities believe it might take between 400 and 500 cc. of air to cause a fatal embolism in a reasonably healthy person. Some believe that as little as 10 cc. of air in a very ill or moribund patient might cause death. Certainly the injection of large amounts of air into parts of the blood stream other than the saphenous veins, without regard to blockade of the blood flow, would be dangerous. The same danger of overdose or improper use is present when one uses morphine or digitalis or any other drug. I have used this method for over three years without seeing anything resembling an air embolus.

Technique

The patient is examined while standing erect, the involved skin area is sterilized by swabbing with alcohol. Veins to be injected are marked

---

Dr. Alexander is a staff member of Asbury Methodist Hospital, Mt. Sinai Hospital, and Minneapolis General Hospital.

Read at the annual meeting of the Southern Minnesota Medical Association, Mankato, Minnesota, September 14, 1953.

with mercurochrome. Then the patient lies in a horizontal position with the vein to be injected uppermost. The foam to be injected is largely air and is, therefore, lighter than blood; by gravity it will displace the blood at the uppermost part of the vein. A sterile 24-gauge, 1-inch needle attached to a sterile 5 cc. syringe is forced upward through the sterilized rubber cap of an inverted Sylnasol vial and 2 or 3 cc. of air is pushed through the Sylnasol. The position of the vial, needle and syringe are then reversed and thin foam is aspirated from above the Sylnasol. Again the position of the vial, needle and syringe is reversed and the thin foam injected up through the Sylnasol. It is then reversed again and thicker foam aspirated from above the liquid. After several passages of the foam through the Sylnasol, thick foam with tiny air bubbles should be present in the syringe. The patient's skin is again sterilized, the needle inserted into the vein, blood is aspirated to make certain the needle is well placed, and several cubic centimeters of the foam are injected. The point of the needle is then pushed through the posterior wall of the vein. The syringe is removed from the needle, pressure is applied with the edge of the hand just proximal to the area injected for one-half to two minutes (to help minimize movement of blood and foam through the vein). Then the needle is withdrawn and simultaneously a sterile cotton ball or gauze pad is pressed over the area. A larger pad of cellucotton is added over the small sterile pad and fastened securely in place with tape or gauzetex. Gauzetex sticks to itself but not to the skin; those patients whose skin is sensitive to tape are very grateful for it. Gauzetex is not satisfactory for use on the thigh. Adhesive elastic is best on thigh and knee areas.

An injection into a fairly large vein will be more effective if the "Empty Vein" technique is used. After the needle point has been carefully placed in the vein, the leg is elevated for perhaps fifteen seconds. This reduces the size of the vein. Then the leg is lowered to the table and the foam is injected; because of the reduced size of the vein, the same amount of foam can destroy a larger segment of vein.

After making one injection I usually wait several minutes to make certain there is no allergic reaction, and then make two or three more injections, but never exceed a total of 10 cc. foam at one time. After all injections are finished and patients are dressed I ask them to walk the length of the hall and then sit down in the reception room for five minutes. If after that time there is still no sign of allergy, they may leave. There are perhaps 5 per cent of patients who are, or who become, allergic to Sylnasol. Because of these patients, it is advisable to have an emergency box with sterile syringes and needles, adrenalin, aminophylline, intravenous Benadryl, and an airway always quickly available. Urticaria, visual disturbances, vomiting, and even anaphylactic shock can develop very rapidly. Having once shown an allergy to Sylnasol, a patient must thereafter be treated with special care. I do not depend on memory only, but put a big warning, in red, on the front of their record and on their summary sheet. If, subsequently, they have fairly large veins to be injected, I use a mixture of salt and sugar (Varisol, Abbott). For small veins and bursts I first give the patient an anti-histaminic, and then inject only a small amount of Sylnasol. Incidentally, it does no good to switch from one soapy solution to another, hoping to avoid allergic symptoms. For example, if a patient is allergic to Sylnasol he will also be allergic to Sodium Morrhuate. And I have repeatedly tried to use the synthetic Sotradecol for these allergic patients but the result is always the same, as far as an allergy is concerned, as with the soapy solutions.

After all injections have been made, the patient stands and moves around while the dressings, especially those dressings near the knee, are examined to make certain they give snug pressure but are not too tight. An Ace elastic bandage, No. 8, four inches wide, is applied around the calf, ankle and foot. If the patient has never used an elastic supportive bandage he is shown how to apply it, starting just below the knee, overlapping 50 per cent each turn as he goes down the calf; twice around the foot and ankle as a double figure of eight; then back up the calf, overlapping as before, as far as the bandage will go. This method gives double pressure at the distal part of the calf because there is twice as much elastic bandage there. The patient is warned not to apply the bandage in any way that could give the most pressure at the top of the calf because that would act as a tourniquet. The elastic support is removed at bedtime and put on again before breakfast. It can be washed once or twice a week in warm soapy water, rinsed, squeezed (not wrung) fairly dry, and laid flat on a kitchen table or clean board, to dry; it should not be dried by hanging over a line.

Elastic stockings have two advantages over the wrap-around type of bandage; they look better and they give support around the knee. An elastic stocking can be used instead of the elastic bandage except for the twenty-four hours after injections, during which time the bulky pressure dressings at the site of injections make the stocking impractical. Patients must be warned that elastic stockings are only satisfactory as long as the elastic is new and strong.

The pressure dressings at the site of injection are removed, by the patient, after twenty-four hours—sooner if the patient's skin is sensitive to tape. Local heat helps minimize discomfort; aspirin is seldom needed. Elastic support is usually worn for several days or more after each set of injections; all day at first, then removing the support a few hours earlier each day as the discomfort and swelling diminish. Return visits for subsequent injections are usually made at weekly intervals. At these subsequent visits, inspection of previously injected areas will often reveal hard tender areas of pocketed half clotted blood. Sigg calls them "intra-vascular hematoma." The name "soft center" is simpler. They occur after about one-third of the injections. If gentle pressure with the finger tips gives the impression of fluid, a quick stab incision with a sharp pointed No. 11 Bard Parker Blade will allow the molasses-like fluid to escape; the pressure inside the vein is relieved and the patient gets relief in a matter of minutes, very similar to the quick relief that follows drainage of a boil or quinsy. Small amounts of half clotted blood can be left alone but large amounts, if unopened, cause unnecessarily prolonged discomfort, pigmentation that is avoidable, and poorer end results because half clotted blood is easily recanalized.

Many of these details are explained to the patient at the office and are summarized in mimeographed sheets given to each patient. These sheets, labeled, "Information for Varicose Vein Patients," also stress the importance of activity for at least several hours after injections. The patient may go shopping, or golfing, or dancing after injections but should not sit still at a movie, or at a card game; there should be a quick walk or other activity at least every half hour for the rest of the day.

I advise all patients with varicose vein tendency to get two rest periods of fifteen minutes each day when the legs are reasonably normal. During the period after injections and during any period when there is a tendency to edema I urge several rest periods each day.

The average patient with varicose veins is advised to return yearly for treatment of any new veins. They are also advised against allowing an undue gain of weight. All this is explained in the mimeographed sheet.

Injection therapy is only usable in comparatively small veins; large veins with definite reverse flow should be treated surgically. All veins originating from a perforator should have surgery first; the perforator should be ligated as far under the fascia as possible; then the superficial veins can be injected. Moderately enlarged veins (borderline between those definitely surgical and those easily injected) can be given a trial of injection therapy, especially if they are tortuous and superficial. Bursts can usually be improved but if diffuse, and mild, and located above the skirt line, they are best left alone. I usually tell the patient the bursts can be improved, possibly 50 per cent, but not eliminated. If the patient wants or expects perfection after treatment of the bursts, then I do not inject. Bursts are chiefly a cosmetic defect; they seldom cause definite pathology.

There is considerable individual variation in the reaction to vein injections. There is also group variation that may help. People with light complexions react, generally, more than people with dark complexions. Blonds react more than brunettes, and people with red hair react even more than blonds. If a vein or burst is very superficial and thin walled, and the patient is a light blond or has red hair, it is advisable for the first trial set of injections, to dilute the 5 per cent Sylnasol liquid with an equal volume of normal saline, and then make the foam from the 2.5 per cent Sylnasol. Too much reaction in such a thin-walled vein may cause a slough even though nothing has been injected outside the vein.

I believe the treatment of varicose veins of pregnancy, depends on whether or not the usual type of varicose veins due to valve incompetence, existed prior to the pregnancy. Women with that type of vein present before conception will benefit from ligation and stripping. Women with only the hormone inbalance type of superficial blue telangiectases should not have surgery or injection therapy. This type should have estrogens, elastic support, rest periods, et cetera.

Injection therapy is contraindicated if the patient is unable to take a short fast walk, at frequent intervals, for several hours after the treatment. If the patient has painful arthritis or a severe sprain in the lower extremities, if the patient has a bad cold or severe infection anywhere, if the patient is exhausted from care of a sick relative, if for any of these or other reasons the patient is much below par and unable to be active, I either postpone the treatment or only inject one or two small veins because the incidence of allergic reactions depends to some extent on the general condition of the patient, and excessive local reaction occurs if the patient is not active.

Patients with only minimal varicose veins but complaining of very definite symptoms such as pain, swelling or numbness, should not be injected. They should have careful examination for flat feet, arthritis, slipped disc, cardiac decompensation, peripheral vascular sclerosis, or other conditions that could produce the symptoms. Injections of small veins and bursts will not correct these other factors and will only bring disrepute to the treatment. Hypothyroidism especially can be confusing. The patient complains of edema, vague leg or low back pains, fatigue, cold feet, and dry scaly dermatitis. She blames her symptoms on moderate varicose veins that probably are not a major factor. Examination usually shows some obesity and often moderate anemia. Such patients, especially if over forty years of age, should be carefully studied for hypothyrodism. A little thyroid extract often relieves the symptoms but treatment of the veins would not.

Arteriosclerotic patients who also have varicose veins, present a special problem. It is desirable to eliminate the veins because they cause back pressure on the capillary bed and thus increase the circulatory impairment caused by the arteries. However, varicose veins of the lower calf and ankle and foot area should not be injected if the arterial deficiency is great; the inflammatory reaction around an injection can draw badly needed blood away from the toe region and precipitate gangrene.

Acute thrombophlebitis is a contraindication to sclerosing therapy until the phlebitis has been quiet for several weeks. However, most venous occlusions recanalize, and it is improper to tell the patient "never let anyone treat your varicose veins." Many of these patients will be very much in need of vein treatment later.

References

1. Foote, R. R.: Varicose Veins. London: Butterworth & Co., 1949.
2. Orbach, E. J.: A new approach to the sclerotherapy of varicose veins. Angiology, 1:302 (Aug.) 1950.
3. Orbach, E. J., and Petretti, A. K.: The thrombogenic property of foam of a synthetic anionic detergent (Sodium Tetradecyl Sulfate N.U.R.). Angiology, 1:23 (June) 1950.
4. Simpson, Keith: Air accidents during transfusion. Lancet (London), p. 697 (June 13) 1942.

INGUINAL HERNIORRHAPHY

(Continued from Page 1248)

been observed. The patient was a very obese, sixty-five-year-old man, in whom the aponeurosis opened in the lower portion. Other similar cases will undoubtedly be seen.

It has been my purpose to attempt to strengthen a defective abdominal wall, taking into account the forces of gravity and internal abdominal pressure on the dependent abdominal wall.

Bibliography

1. Andrews, E. W.: Major and minor technique of Bassini's operation, as performed by himself. M. Rec., 56:622-624 (Oct. 28) 1899.
2. Drye, J. C.: Intraperitoneal pressure in human. Surg., Gynec. & Obst., 87:472-475 (Oct.) 1948.
3. Ferguson, E. D.: Operative cure of inguinal hernia in men. Tr. New York M. A., 15:368-380, 1898.
4. Halstead, W. S.: The operative treatment of hernia. Am. J. M. Sc. (n.s.), 110:13-17, 1895.
5. Halstead, W. S.: The radical cure of inguinal hernia in the male Ann. Surg., 17:542-556, 1893.
6. MacEwen, W.: On the radical cure of oblique inguinal hernia by internal abdominal peritoneal pad, and the restoration of the valved form of the inguinal canal. Ann. Surg., 4:89-119, 1886.
7. Marcy, H. O.: The cure of hernia by the antiseptic use of animal ligature. Tr. Internat. M. Cong. (Lond.), 2:446-448, 1881.
8. McVay, C. B., and Anson, B. J.: A fundamental error in current methods of inguinal herniorrhaphy. Surg., Gynec. & Obst., 74:746-750 (March) 1942.
9. Wood, J.: Strangulated irreducible hernia; removal of omentum and sac; operation for radical cure; recovery. Lancet (Lond.), 2:352 (Aug. 20) 1881.

AN ACUTE CERVICAL TUMOR IN A MENTALLY DEFICIENT CHILD

HEINZ H. BRUHL, M.D.
Faribault, Minnesota

AT THE suggestion of Superintendent Dr. E. J. Engberg I report a case of an acute cervical tumor observed on one of the patients in the Minnesota School and Colony early this year. This case presented a challenge for diagnosis and treatment.

Case 1.—D. R. L., a twelve-year-old boy, was committed as mentally deficient in May, 1944, and admitted to the Minnesota School and Colony April 10, 1945. He presented a typical case of congenital cerebral spastic infantile quadriplegia. His delivery was entirely normal but it is noteworthy that during the second month of pregnancy the mother had a severe hemorrhage with threatened abortion. His deficiency was noted in early infancy. After the patient had entered the institution at Faribault, he was placed in the infirmary for little boys. He grew physically and developed enough strength in his arms to pull himself up by the rails of his bed or any other furniture to a sitting position. He is unable to stand erect and to walk at age twelve. He can grasp things but is actually not able to make purposeful movements with his hands. It is necessary to feed him in bed or in the wheelchair. He is untidy. Though he is not blind nor deaf he does not recognize individuals, does not respond to any directions, and does not seem to mind when different people take care of him. A mental test given in May, 1953, by our psychologist, J. Throne, placed him on the mental level of a six-month-old child.

On March 30, 1953, it was observed that the boy who had previously always eaten well and without trouble, did not eat well and had difficulty swallowing. He developed a temperature of 102° F. The following day he was admitted to the hospital of our institution where the physical examination revealed that he had an acutely inflamed hard tumor about the size of an egg on the left side of the neck anterior to the sternocleido mastoid muscle. Except for much mucus, the throat and tonsils were negative. Dysphagia, stridor and respiratory difficulties were noted at that time. The temperature was 104° F. and the white blood cell count was 18,000. Mantoux tests of 1:1000 and 1:100 dilutions were negative. As the site of the tumor corresponded to the left lobe of the thyroid gland, the diagnosis of an acute thyroiditis was made. Under penicillin, 200,000 units twice daily, and cortone 25 mg. every four hours, the boy's temperature became normal in three days and the signs of inflammation subsided. There was a collection of mucus in the throat but respiratory difficulties and pressure signs from the tumor were not alarming.

On April 7, the mass which had retained its original size started to show signs of fluctuation. On April 9, it was first aspirated and then lanced by our consulting surgeon, Dr. Burton Orr. About 100 cc. of thick green pus mixed with blood and mucoid material was obtained. Many air bubbles were observed at that time. The culture done by the laboratories of the Minnesota State Board of Health showed presence of *Escheria coli, Aerobacter aerogenes* and *Hemolytic staphylococcus aureus,* and the absence of acid-fast bacilli. The pressure being relieved, the boy could swallow soft food again and apparently had less trouble with his airway. The swelling subsided, but drainage continued and there was frothy pus mixed with necrotic tissue fragments and mucoid, saliva-like fluid which continuously exuded from the wound.

At the suggestion of Drs. John F. Arnesen, Burton A. Orr, and Thomas B. Merner, the fistula was filled with diodrast by Dr. J. Gordon Beaton and myself on April 15, 1953. A chest x-ray revealed—to our surprise—an open safety pin lodged in the tissues of the anterior portion of the neck below the larynx and to the left of the trachea. The diodrast had entered the esophagus and stomach thus demonstrating an opening between the abscess cavity and the esophagus. Apparently, the boy had at some time previously managed to put the open safety pin into his mouth and had swallowed it. The pin was lodged in the upper region of the esophagus, had perforated its wall and was now working its way out anteriorly. The tumor represented a secondary abscess following the trauma created by the pin. Following the diagnosis of this condition and on the recommendation of the consultants and medical staff, arrangements were made for the patient's transfer, April 16, 1953, to the Rochester State Hospital for further treatment.

That same day he was seen there by Dr. Kenneth A. Storsteen, Division of Surgery of the Mayo Clinic, and surgical consultant to the State Hospital at Rochester. He and Dr. Magnus Peterson, Superintendent of the Rochester State Hospital, have kindly given permission for me to present this interesting case to you. I shall quote from Dr. K. A. Storsteen's letter in regard to the case:

"My findings were as follows: an open safety pin was located in the left side of neck opposite cricoid cartilage. There was a recent drainage of a cervical mediastinitis and abscess with resultant pharyngo-esophageal cutaneous fistula. There is no fever now. Recent use of cortisone is noted. Recommendations are: Cortisone preparation for forty-eight hours, esophagoscopy and then removal of the safety pin by means of cervical incision if necessary.

The patient was prepared with intramuscular cortisone and operated upon on April 20, 1953. Under pentothal-curare anesthesia the patient's pharynx and esophagus

---

Presented at the annual meeting of the Southern Minnesota Medical Association, Sept. 14, 1953. Adjudged the best case report presented, for which the author was presented with a medal award.

Dr. Bruhl is Assistant Clinical Professor of Pediatrics, University of Minnesota, and Pediatrician on the staff of the Minnesota School and Colony, Faribault, Minnesota.

were examined using both a laryngoscope and an esophagoscope. The keeper part of the open safety pin was visualized at the pharyngo-esophageal junction. The rest of the open pin had perforated through at this level and was in the soft tissues of the left side of the neck. The pin was manipulated transorally, but it was impossible to remove it by these maneuvers. Consequently the neck was opened by means of a longitudinal incision over the anterior edge of the left sternocleidomastoid muscle. The open safety pin was found in the abscess cavity and was grasped by means of straight forceps. Dr. J. M. Carey grasped the keeper part of the pin at the site of perforation under direct vision using a laryngoscope and the safety pin was cut in two. He removed half of the pin through the pharynx and I removed the other half through the neck. The pin was of average size measuring 1⅝ inches in length. Two penrose drains were inserted and the wound closed in layers. Dr. J. Carey repeated the esophagoscopy and found the area of perforation to be quite localized on the posterior and the left lateral wall of the pharyngo-esophageal area where there was granulation and necrotic tissue.

"Postoperatively the patient did very well. He was placed on penicillin and dihydrostreptomycin. The cortisone was rapidly reduced. The drains were removed after a few days. The cervical wound drained saliva and mucus but gradually closed and entirely stopped draining on May 10, 1953."

The patient was returned to the Minnesota School and Colony on May 19, 1953, and continues to get along satisfactorily.

Discussion of the Case

Before discussing the diagnostic and general aspects of this interesting case we would like to pay tribute to the splendid surgery done by Drs. Kenneth A. Storsteen and J. M. Carey. We have nothing to add except to express our admiration for the skill with which the operation was performed and which contributed so greatly to save this boy's life.

From a diagnostic point of view this case was challenging. All tumors of the upper regions of the neck like cervical adenitis, Bezold's mastoid abscess, cystic hygroma, dermoids, thyroglossal cyst, could be excluded a priori. I shall restrict my discussion to acute tumors of the lower carotid triangle and among those mainly to three: (1) acute processes of the thyroid, (2) tuberculous abscesses and (3) branchial cysts.

1. Acute inflammation of the thyroid is comparatively rare. Most cases follow any kind of infectious diseases like influenza, pneumonia, diphtheria, mumps, measles, scarlet fever, typhoid fever, et cetera. However there are a good many cases on record without any known antecedent infection. Suppuration occurs in about 10 per cent of all cases. While the nonsuppurative form is mild, afebrile, and runs a self-limiting course of ten to fifteen days, the cases which become purulent have an abrupt onset with high fever and the cardinal local signs of inflammation. Swelling and tenderness are confined to one lobe or the isthmus. There is dysphagia.

The clinical signs in our particular case corresponded to the picture of acute thyroiditis so well that we may be forgiven for having made that diagnosis though we were well aware that it is a very rare condition, especially in childhood. It happened that we had seen such a case in a woman of middle age just two weeks previously and that might have somewhat influenced us in the original diagnosis.

2. The possibility of a tuberculous process had to be considered. Caseous necrosis with abscess formation of the thyroid gland is usually associated with an advanced pulmonary tuberculosis. Cold abscesses originating from a tuberculous focus in one of the upper cervical vertebrae appear usually as retropharyngeal abscesses but will sometimes work their way down the cervical mediastinum and appear at any of the lower cervical triangles. All these abscesses are "cold" and do not have the signs of acute inflammation shown by our patient. He had no symptoms of cervical spondylitis. His chest x-ray and Mantoux tests had been repeatedly negative. To be on the safe side, however, the abscess was aspirated before being opened. The pus obtained was not of tuberculous nature and the culture was later reported negative for the Koch bacillus.

3. Finally we had to think of a branchial cyst. Branchial cysts are painless fluctuant tumors located at any level of the neck along the anterior margin of the sternocleidomastoid muscle. Those of the lower carotid triangle are embryonic remnants of the second, third, or fourth branchial pouch. Usually they date from birth or early infancy without giving signs of pressure or dysphagia, but sometimes they become infected. We had never observed this kind of a tumor in our patient prior to his acute illness. But when the fistula on his neck did not close and continued to discharge a foamy pus mixed with saliva we had to investigate this possibility. With this in mind we injected the diodrast into the fistula to take an x-ray and discovered what none of us had suspected, namely a foreign body.

General Implications

As we all know infants and children habitually, by instinct and play, tend to put all kinds of objects into their mouths. Many of them are swallowed. A most amusing selection and variety can be found in the old textbook on surgery by Warren and Gould (1904) and in the tables of Chevalier Jackson in Brennemann's Pediatrics (1949). Many of these objects are swallowed without the slightest difficulty and the accident is suspected only because of the disappearance of an object with which the child had been previously playing. In our case we did not have the slightest indication of that sort as nobody had observed the boy grasping the safety pin and manipulating it into his mouth.

All observers stress the fact that the majority of foreign bodies, even pointed or sharp ones, will pass through the whole alimentary canal without difficulty and will be eliminated spontaneously. F. Christopher states: "It is surprising how many coins, open safety pins, needles and tacks will pass without apparent injury to the esophagus into the stomach and in fact through the entire gastrointestinal tract." Also Ladd and Gross state that "only occasionally foreign bodies lodge in the esophagus and will require the services of an esophagoscopist for removal." In their series of 337 foreign bodies swallowed by children, 95 per cent passed through without giving any trouble, amongst them: thirty-five open, thirty-eight closed safety pins and twenty-two straight pins. Among the fourteen foreign bodies which required surgical intervention were eight open safety pins and three needles. They had to be removed not from the esophagus but from the region of the pylorus and duodenum.

The statistics of the bronchoscopists and esophagoscopists, on the other hand, create a far less favorable impression. In their hands all the unlucky cases are concentrated where the foreign body became stuck in the upper air or food passages. Chevalier Jackson and Ch. L. Jackson, in Philadelphia, saw over 3,300 such cases over a period of forty-five years. A foreign body will lodge in the esophagus when a disproportion exists between the body and the esophagus or when a sharp pointed object punctures the wall of the esophagus and burrows itself into its mucous membrane. Previously it was assumed that foreign objects would get stuck in any of the three narrowings of the esophagus. But Iain Matheson (London, 1949) showed in an interesting review of 602 cases that by far the majority (78 per cent) of them were found in the region of the crico-pharyngeal sphincter which by its reflex action prevents the entry of foreign bodies into the esophagus. Also in our case the safety pin became lodged in that area. The increased reflex response which is so characteristic for the child with cerebral palsy might have been a predisposing factor.

Finally, I wish to stress another point. Looking over some of the statistics on foreign bodies swallowed or aspirated by children, I was impressed by the following: In 1,300 cases tabulated by Chevalier Jackson and son (in Brennemann's Pediatrics) the greatest frequency was taken by seeds and peanuts (365), coins took second place (250), and safety pins third place with (187). In a list of 337 foreign bodies, published by Ladd and Gross (Boston), safety and straight pins rank with 28 per cent, second only to the 30.5 per cent representing pennies and nickels. However, in the group of babies under two years of age safety pins and straight pins rank first of all foreign bodies with 48 per cent. One gains a similar impression from statistics reported all over the country—E. G. Gill (Virginia), P. H. Holinger (Chicago), C. M. Norris (Philadelphia), K. A. Phelps (Minneapolis), O. W. Suehs (Austin, Texas)—70 to 88 per cent of all swallowed safety pins, "an ironic designation" (Richards), are found in children under two years of age.

In sharp contrast to these reports in our country are the experiences of Iain Matheson in England. The vast majority of his 602 cases concern fish and meat bones (290), bolus of meat (34), and dentures (28), swallowed by adults. In children under twelve years of age, coins rank first with eighty-five cases, while safety pins are on the end of the list with nine cases, pins and needles with only five cases.

I would like to quote a very interesting remark of Chevalier Jackson, "Ino Kubo, the eminent Japanese bronchoscopist, when visiting our clinic stated that no case of safety pin as a foreign body had ever been reported in Japan. Safety pins are rarely used there; they fasten their clothes by other means."

In view of these facts, I believe, one question will come into everybody's mind: Do we have to use safety pins in our nurseries? For us, in an institution with several hundred mentally retarded infirm children this really presents a problem. In the care of these children we depend largely on the work of female patient helpers. Most of our infirm patients have to wear diapers beyond infancy and, in time, become able to open the pins. Actually, one wonders why more similar accidents have not happened. After we had discovered the safety pin in our boy's throat we decided, if possible, to do away with safety pins all together in our infirmaries. We are working on a new kind of diaper which can be fastened by other means.

But this is not only a problem for our institution, it should be equally important for the general public. In spite of repeated warnings by Chevalier Jackson and other bronchoscopists, babies' dresses and diapers are still fastened with safety pins. It is the advocated method in each nurse's handbook dealing with baby care. The young student nurses are constantly reminded of the potential danger of pins and, consequently, the number of accidents in hospitals is small. Mothers at home, where most of the accidents happen, should become much more aware of the hazards involved. "Most of the accidents are due to carelessness and therefore avoidable" (Ch. Jackson). Usually, young mothers are instructed by nurses how to take care of the baby in only two or three lectures. That is not enough. Mothers should be constantly reminded that small objects like safety pins, buttons and coins have to be kept out of a baby's reach. They should learn of the statistical figures and be warned of the dangers and hazards. This could be done in the doctor's office, in newspaper articles, booklets, government pamphlets, in a nationwide educational program on radio and TV.

I know well that it is impossible to turn our civilization back and eliminate from our glorious age coins and buttons. As to the use of safety pins in the nursery, however, I believe we physicians could and should do something. Prevention is better than cure.

Bibliography

1. Barrett, J. H.: Foreign bodies in the air and food passages. Arch. Otolaryng., 54:651, 1951.
2. Bonnier, M.: A brief analysis of fifty foreign bodies in the larynx, trachea and bronchi. Dis. Chest, 16:112, 1949.
3. Christopher, F.: Minor Surgery. Philadelphia: W. B. Saunders Co., 1948.
4. Clerf, L. H.: Foreign bodies in the air and food passages. Surg., Gynec. & Obst., 70:328, 1940.
5. Delaney, C. J.: Foreign bodies swallowed by children. New York State J. Med., 40:1024, 1940.
6. Gill, E. G.; Bell, H. L., and Mertz, R. D.: Management of foreign bodies in air and food passages. Eye, Ear, Nose & Throat Month., 30:205, 1951.
7. Holinger, P. H.; Andrews, A. H., and Annison, G. C.: Pulmonary complications due to endobronchial foreign bodies. Illinois M. J., 93:19, 1948.
8. Jackson, Ch., and Jackson, Ch. L.: Brennemann's Practice of Pediatrics. Vol. 2, Chapter 56, 1949.
9. Jackson, Ch., and Jackson, Ch. L.: Lewis' Practice of Surgery. Chapter 7—Surgery of the larynx and trachea and endoscopic surgery of the bronchi. Vol. 4, 1932.
10. Jackson, Ch., and Jackson, Ch. L.: Diseases of Air and Food Passages of Foreign Body Origin. Philadelphia: W. B. Saunders Co., 1936.
11. Jackson, Ch.: Foreign bodies in air and food passages. Surg., Gynec. & Obst., 28:201, 1919.
12. Jackson, Ch.: Four open safety pins in esophagus. J.A.M.A., 81:1099, 1923.
13. Jackson, Ch.: Foreign bodies in intestines. M. Rec., 140:285, 1934.
14. Ladd, W., and Gross, R.: Abdominal Surgery of Infancy and Childhood. Philadelphia: W. B. Saunders Co., 1948.
15. Matheson, I.: Foreign bodies in the esophagus: a review of six hundred and two cases. J. Laryng. & Otol., 63:435, 1949.
16. Norris, C. M.: Foreign bodies in the air and food passages: a series of two hundred fifty cases. Ann. Otol., Rhin. & Laryng., 57:1049, 1948.
17. Phelps, K. A.: Foreign bodies lodged in air or food passages. Minnesota Medicine, 27:27, 1944.
18. Richards, L. G.: Medical progress; foreign bodies in respiratory tract. New England J. Med., 245:141, 1951.
19. Suehs, O. W.: Foreign bodies in air and food passages; observations in series of eighty-five cases. Texas State J. Med., 46:298, 1950.

RURAL HEALTH CONFERENCE TO BE HELD IN DALLAS

"Let's Put More 'U' In CommUnity" will be the theme of the ninth National Conference on Rural Health, sponsored by the AMA Council on Rural Health, to be held at the Baker Hotel in Dallas, March 4-6, 1954.

Leaders in the fields of medicine, agriculture, education and public health will attend the formal sessions which begin at 2 P.M. on Thursday, March 4, and continue through Saturday, March 6, ending with a luncheon meeting at 1 P.M. Problems of nutrition and costs of medical care and methods of prepayment will be the principal subjects to be discussed.

Following the practice of the last few years, an informal pre-conference session for doctors only will be held at 10 A.M. on Thursday, March 4. Council Chairman F. S. Crockett, Lafayette, Ind., said his session would be devoted to problems confronting physicians who are members of state rural health committees or committees handling rural health problems. Physician participation at the grass roots and problems pertaining to health insurance matters are among the major subjects to be considered.

Laboratory Aids to Medical Practice

Sponsored by
The Minnesota Society of Clinical Pathologists

LABORATORY AIDS IN THE DIAGNOSIS OF VIRAL AND RICKETTSIAL DISEASES

HENRY BAUER, Ph.D.
Minnesota State Board of Health, Division of Medical Laboratories,
Minneapolis, Minnesota

SOME of the mysteries of virus diseases are rapidly unfolding with the development of laboratory tests to aid in the diagnosis of viral infections. Although we speak freely about virus diseases, much remains to be learned about their serologic relationships, the reservoirs, modes of transmission, clinical manifestations, prevention and control. In order to learn about virus diseases and in order to serve the patient and community adequately we must have teamwork, the team consisting of the local physician, the laboratory worker and the epidemiologist. There must be an adequate flow of information among these three persons so that each can perform his work efficiently and intelligently. If the laboratory is to supply maximal information, it is essential that the data card accompanying the specimen container be filled in completely and that directions for the collection and submission of specimens be followed. Failure to comply will make it impossible in most cases to perform the tests properly.

The laboratory services of the Minnesota State Board of Health in the diagnosis of viral and rickettsial diseases are limited to those tests described in this communication. Changes in procedure, methods and interpretation will be made as knowledge of virus diseases increases and facilities to perform tests become available. The tests performed by the laboratories of the Minnesota State Board of Health supplement those of the hospital and private clinical laboratory. Accordingly, such specimens as blood and spinal fluid for cell count, chemical analysis of various body fluids and tissue for sectioning should not be sent to the laboratories of the Minnesota State Board of Health.

Results of serologic tests are of significance only when a rise in antibody titer can be demonstrated between the onset of illness and convalescence. It is therefore essential that at least two samples of serum or whole blood be submitted, the first sometime during the first five days of illness and the second indicated in Table I. The first specimen will be stored in the Board of Health laboratory and tests will be run on both specimens after the second one is received. Single tests for complement-fixing, neutralizing and similar antibodies are of little diagnostic value because the presence of such antibodies may represent previous virus infection or immunization.

It should be noted that in most cases the laboratory tests will be primarily useful in making a diagnosis in retrospect because of the necessary time interval between the collection of blood specimens.

Because our resources are limited and laboratory tests for virus diseases are expensive and time-consuming, we ask your co-operation to submit only specimens of real diagnostic importance. Specimens should be collected and forwarded without delay so that they arrive at the laboratory during the working days Monday through Saturday. If it is necessary to ship frozen tissue or specimens for rabies examination so that they arrive on week ends or holidays, special advance arrangements should be made for reception of the shipment. Mailing containers for the submission of blood specimens are available on request to the Minnesota State Board of Health, Division of Medical Laboratories, University Campus, Minneapolis 14, Minnesota.

This is the eleventh in a series of editorial reports sponsored by the Minnesota Society of Clinical Pathologists.

TABLE I. SPECIMENS USED AND COLLECTION REQUIREMENTS FOR THE LABORATORY DIAGNOSIS OF VIRAL AND RICKETTSIAL DISEASES

Viral Diseases	Specimen	When to Collect
Coxsackie infection	Stool, throat washings, blood	On special arrangement with laboratory.
Encephalitides Western equine and St. Louis encephalomyelitis	7 cc. whole blood	1st: Within 5 days of onset. 2nd: 21-28 days after 1st.
	Brain and cord tissue	Aseptically at autopsy—freeze. Keep frozen in transit or place in sterile 50% glycerine solution, pH 7.0.*
Influenza	7 cc. whole blood	1st: Within 5 days of onset. 2nd: 10-14 days after 1st.
	Lung tissue	Aseptically at autopsy—freeze and keep frozen in transit.
	Throat washings	On special arrangement with laboratory.
Lymphocytic choriomeningitis	7 cc. whole blood	1st: Within 5 days of onset. 2nd: 21-30 days after 1st.
	Brain, cord tissue, spleen	Aseptically at autopsy—ship same as encephalitides.
Lymphogranuloma venereum	7 cc. whole blood	1st: When disease suspected. 2nd: As requested by laboratory.
Mumps	7 cc. whole blood	1st: Within 5 days of onset. 2nd: 10-14 days after 1st.
Pneumonia, virus	7 cc. whole blood (do not chill)	1st: Within 5 days of onset. 2nd: 10-14 days after 1st.
Psittacosis (Ornithosis)	7 cc. whole blood	1st: Within 5 days of onset. 2nd: 10-14 days after 1st.
	Lung, spleen, liver	Aseptically at autopsy—freeze and keep frozen in transit.
	Birds	Wrap in cloth soaked with disinfectant—freeze and keep frozen in transit.
Rabies	Head of animal	When animal dies or is killed.† Place head in pliofilm or similar container, seal to make waterproof. Pack waterproof container in ice and keep cold in transit.
Smallpox and vaccinia	Scrapings Vesicular fluid Crusts	On special arrangement with laboratory.
Rickettsial diseases Q fever Rickettsialpox Rocky Mountain spotted fever Typhus	7 cc. whole blood	1st: Within 5 days of onset. 2nd: 14 days after 1st.
	Spleen and liver	Aseptically at autopsy—freeze and keep frozen in transit.
Miscellaneous diseases Toxoplasmosis	7 cc. whole blood	1st: When disease is suspected. 2nd: 10-14 days after 1st.
	Brain, spleen or any organ suspected	Aseptically at autopsy—keep cool in transit—**do not freeze.**

*Equal parts of sterile distilled water and analytical or highly purified glycerine. This mixture may have a pH of 7.0 without adjustment. If necessary, add Sorenson's buffer to bring to a pH of 7.0.

†Do not kill animal suspected of having rabies. Keep animal tied up and under observation for 2 weeks after date of biting. If animal dies, cut the head off close to the shoulders. Use rubber gloves in handling carcasses of animals suspected of having rabies. Package as directed above. Address package to the Minnesota State Board of Health, Division of Medical Laboratories, University Campus, Minneapolis 14, Minnesota. Label: RUSH—PERISHABLE—KEEP COOL—ADVISE CONSIGNEE IMMEDIATELY BY TELEPHONE—GLADSTONE 5973—OF RECEIPT OF THIS PACKAGE.

Table I lists the diseases for which tests are available, the type of specimen and the time the specimen must be collected. All specimens should be shipped promptly according to directions.

Tests for poliomyelitis will be performed as soon as facilities become available and then only through special arrangements with the Division of Medical Laboratories. Physicians will be informed when we will be ready to accept specimens to be examined for poliomyelitis viruses.

Reports and Interpretation

All laboratory results should be carefully correlated with the patient's clinical picture because of certain inherent limitations of some of the tests.

Western Equine Encephalomyelitis, St. Louis Encephalomyelitis and Lymphocytic Choriomeningitis.—If antibodies are demonstrated, the neutralization index will be given and the report will indicate whether the results are to be considered diagnostically significant or equivocal. If antibodies cannot be demonstrated, a negative report will be made.

Virus isolation and identification will be reported specifically.

Influenza.—Serologic tests are of significance *only* if performed on two specimens collected according to the schedule shown in the table. A fourfold or greater rise in antibody titer between the acute and convalescent serum specimen is diagnostically significant. The hemagglutination inhibition titer will be reported in all tests demonstrating antibodies. Failure to demonstrate a rise in antibody titer of serum pairs does not rule out influenza. The inability to demonstrate a rise in titer may be due to a number of causes. For example, the patient may be infected with a virus other than the strain with which the tests are performed, the patient may have a high initial titer, which occurs especially in recently vaccinated persons, or the patient may be a poor producer of antibodies.

Lymphogranuloma Venereum.—The complement-fixation tests will be reported in terms of titer. Sera from cases of lymphogranuloma usually shows titers of 1:40 or more, although titers as low as 1:4 may be found. Sources of error that should be considered in the interpretation of this test are (1) nonspecific reactions in sera from some patients in the early stages of syphilis, (2) false positive results due to contact with viruses which are antigenically related to the virus causing lymphogranuloma venereum, such as the virus causing psittacosis, and (3) false positives because of the performance of a Frei test and resulting antibody rise.

Early administration of antibiotics may inhibit the development of complement-fixing antibodies.

Mumps.—The complement-fixation test will be reported in terms of titer. A negative or low titer in the first serum followed by a fourfold or greater rise in titer in the second specimen is indicative of a current mumps infection. If the first specimen is not obtained early in the disease, both sera may show the same titer. In this case, a titer of 1:32 or higher can be regarded as presumptive evidence of a recent infection with mumps virus, since titers of complement-fixing antibodies of 1:32 are rarely found in sera of normal persons, except those who have been infected with the virus within the preceding year.

Virus Pneumonia (Primary Atypical Pneumonia).—Cold hemagglutination tests will be reported in terms of titer. While a titer of 1:32 or higher is probably significant in a single late specimen, both acute and convalescent phase sera should be collected for more reliable results. A fourfold or greater increase in titer between the acute and convalescent serum is significant. However, cold agglutinins have been reported in such diseases as trypanosomiasis, black-water fever, mumps orchitis, hemolytic anemias, peripheral vascular disease and certain diseases of the liver. Accordingly, the results of this test should be carefully correlated with the patient's clinical history and findings.

Psittacosis (Ornithosis).—Complement-fixation tests will be reported in terms of titer. A rising titer during illness is significant if accompanied by characteristic clinical symptoms. Positive complement-fixation tests do not always supply a definite diagnostic aid, particularly the results of a single test, because of cross reactions due to antigenic relationships between members of the lymphogranuloma-psittacosis group of viruses.

Early administration of antibiotics may prevent the development of complement-fixing antibodies.

Q Fever.—Complement-fixation tests will be reported in terms of titer. A negative or low titer (below 1:8) followed by a rise in titer to 1:64 or more in the second specimen is diagnostically significant.

Rabies.—The presence of typical Negri bodies in brain tissue is to be considered diagnostic of rabies and will be reported immediately by telephone. Early in the disease, Negri bodies may not be present in detectable numbers, and, accordingly, a negative microscopic report does not rule out the possibility of rabies. Also Negri bodies may not be found if the brain is mutilated or portions destroyed by gunshot wounds or violent blows. Microscopic examinations of decomposed specimens are unreliable and are often unsuitable for animal inoculation. Results of animal inoculations, if positive, will be reported immediately by telephone. To obtain results from animal inoculation may require two weeks or more.

Rocky Mountain Spotted Fever, Typhus Fever and Rickettsialpox.—The Weil-Felix agglutination tests for Rocky Mountain spotted fever and typhus fever will be reported in terms of serum agglutination titer. Patients who have Rocky Mountain spotted fever generally may be expected to show a high titer for Proteus OX-2 and a low titer for Proteus OX-19. However, this agglutination pattern may be reversed or an elevation of antibody titer with both antigens may occur. Agglutination tests on a single serum specimen are of little value unless the antibody titer is well above 1:160. Care must be taken in interpreting the results of these tests because infections due to Proteus may give rise to agglutinins. There are other circumstances also in which nonspecific Proteus agglutinations may be obtained. Reactions in such instances are usually low in titer.

Complement-fixation tests for rickettsialpox, Rocky Mountain spotted fever and typhus will be

(Continued on Page 1261)

Case Report

MENTAL DEFICIENCY IN A CHILD WHOSE MOTHER WAS GIVEN ELECTRIC CONVULSIVE THERAPY DURING GESTATION

A Case Report

J. YAMAMOTO, M.D., E. M. HAMMES, M.D.,
and E. M. HAMMES, JR., M.D.
Saint Paul, Minnesota

SHOCK treatments have been used in the treatment of women who have become psychotic during pregnancy. The treatment of choice has been electric convulsive therapy since it has been assumed that hypoglycemic reactions would be harmful to the fetus.* Gralnick[2] reported in 1946, the cases of two pregnant women who were treated for psychoses with insulin. Both of these cases had stillbirths. Boyd and Brown[1] made a comprehensive review of the literature in 1948. Their study included two case presentations. One patient had tonic contraction of the uterus after one electric shock treatment; after another treatment, changes were observed in the fetal heart rate. A normal rate and rhythm were noted fifteen minutes after the convulsion. The child was born a few days after the last treatment and there were no discernible abnormalities. The other woman whom they treated was found after a treatment with blood over the perineum. However, she was able to continue with the pregnancy. They concluded, that in view of the hazards inherent in a psychosis during the gestation period and since the prognosis is better if treatment is instituted soon after the onset of the psychosis, that electric convulsive therapy is indicated for patients with manic depressive disease or schizophrenia. In 1950 Williams and Barrera[6] expressed the opinion that pregnancy is not a contraindication to electric convulsive therapy.

Kent[4] reported treating a patient with both electric convulsive therapy and "ambulatory insulin." Her patient had a miscarriage at four months. Simon[5] gave electric shock treatments to a gravid patient seven months before she delivered. It was reported that this case had a "stormy and toxic" pregnancy and that the child died two days after delivery. The cause of the child's death was not given.

The following is a case report of a patient referred by Dr. Ross Kilgard of Watertown, South Dakota, to the Drs. Hammes.

Case Report

Case 1.—In September of 1949, this twenty-five-year-old housewife and her husband gave the following history: Patient has always been very sensitive and with marked feelings of inferiority. She was an "A" student in college and is a graduate medical technician. In November of 1948, her first born child died after a long illness. The patient was very starey-eyed for a while after that. She said that at times while bathing this child she had had urges to take a butcher knife and slit his throat. About six weeks ago, for no apparent reason, the patient became angry with her father-in-law. She told him what she thought of him and forbade him to come into the house. She has always felt rather hostile to him and her husband admits his father is very irritating to people. She seemed to be all right otherwise.

On September 9, 1949, she seemed very nervous. She took seven or more grains of Phenobarbital during the day. The next day the husband was called home from work. The patient told him she had seen God in a vision and He told her she was going to die. She has been hearing voices and sees God, her mother, et cetera, in visions and has been talking almost constantly since then.

Her sleep and appetite were good prior to onset of the present illness. The patient's mother is an extremely domineering woman. Her parents were divorced when the patient was five years old. Her mother always told her exactly what to do and how to do it. The patient has been bitter about this at times. Her husband and her mother have had frequent arguments.

The family history and past medical history were not contributory. One son died of "encephalitis or spinal meningitis" at the age of two years. The patient's last menstrual period was in April and she was five months pregnant.

The general physical examination and the neurologic examination were negative except that the fundus of the uterus could be palpated two finger breadths below the umbilicus. Her hemoglobin was 76 per cent and the urine was normal except for a one plus sugar.

Mentally the patient was bland but cooperative. Her emotional responses were silly, labile and inappropriate. She spoke excessively and in a rambling manner and described various visual and auditory hallucinations. She had no insight into the nature of her condition.

The diagnosis was that of a schizophrenic reaction. She was hospitalized and had twelve electric convulsive treatments. Two months after the last treatment, she was dismissed after having made satisfactory progress. She was clear mentally.

Three weeks after the patient left the hospital her daughter was born. This child was examined at the age of thirty-two months.

History from the parents was that labor and delivery were normal with no postpartum complications. The child was slow in sitting up and was fifteen to eighteen months old before she could walk. She had not been toilet trained; used only one word, "mama," and the father was not sure that she used this word with comprehension. She had a terrible temper and would not obey. She threw things and cried. She was very active, and chewed her fingernails. She had a hard time going to sleep. Her appetite was good and she had gained weight regularly. She could play "patty cake" and could point to her nose and feet, but that was about all she would do. She took little interest in pictures and did not mix well with other children. She had worn eyeglasses for strabismus since the age of twenty-four months. The mother thought the baby's fontanel was never like other children's but their doctor thought it was normal.

The physical examination was negative.

The neurological examination showed that the child's pupils and eye movements were normal except for a bilateral strabismus, for which she was wearing glasses. Movements of the face and tongue were normal. We were unable to examine the fundi because of the lack of cooperation. Both upper extremities gave normal reflexes, good muscle strength, and there was no evidence of any awkward movements. The abdominal reflexes were normal. Her gait was normal. Both lower extremities responded with normal knee and ankle jerks, had had no ankle-clonus, or abnormal Babinski test.

Mentally she seemed retarded. She did not talk, and was unable to carry out simple orders.

Our diagnosis was that of a mental deficiency.

Summary

It is the consensus of psychiatric opinion[1,3,6] that electric convulsive therapy should be instituted in gravid women, when there are definite indications such as a manic depressive or schizophrenic psychosis.

A case report has been presented, with the results of the examination of the child three years after her mother was given a series of twelve electric convulsive treatments during pregnancy. The child was found to be mentally deficient. We are of the opinion that this was probably not due to the treatments.

It will be of interest to note the incidence of mentally deficient children from mothers who have received electric convulsive therapy during pregnancy.

References

1. Boyd, D. A., Jr., and Brown, D. W.: Electric convulsive therapy in mental disorders associated with childbearing. J. Missouri M. A., 45:573, 1948.
2. Gralnick, A.: Shock therapy in psychoses complicated by pregnancy. Am. J. Psychiat., 102:780, 1946.
3. Kalinowsky, L. B., and Hoch, P. H.: Shock Treatments, Psychosurgery and Other Somatic Treatments in Psychiatry. 2nd ed. revised. pp. 396. New York: Grune and Stratton, 1952.
4. Kent, E. M.: Shock therapy during pregnancy. Psychiat. Quart., 21:102, 1947.
5. Simon, J. L.: Electric shock treatment in advanced pregnancy. J. Nerv. & Ment. Dis., 107:579, 1948.
6. Williams, R. L., and Barrera, E.: Observations and opinions concerning complications and contraindications in electric convulsive therapy. Psychiat. Quart., 24:800, 1950.

1124 Lowry Medical Arts Bldg.

LABORATORY AIDS IN THE DIAGNOSIS OF VIRAL AND RICKETTSIAL DISEASES

(Continued from Page 1259)

reported in terms of titer. A negative or low titer in the first specimen followed by a high titer in the second specimen is usually diagnostically significant.

Toxoplasmosis.—The serum antibody titer as determined by the dye test will be reported. It is the opinion of the Committee on Toxoplasmosis, Tropical Medicine Study Section, National Institutes of Health, that a positive diagnosis of congenital toxoplasmosis can be made when the dye-test titer is 1:256 or more in both the mother and child, provided the child is over four months of age. When a high titer is obtained during the first weeks of life, the test should be repeated at the end of four months. If the high titer was due to infection in the child, it will still be high in the second test. If the second test is negative or the titer is low, the diagnosis of toxoplasmosis cannot be made because the result of the first test was due to passive transfer of antibody from the mother. In older children, particularly over the age of six years, when the dye-test titer may be less than 1:256 in the mother or child or both, the diagnosis still can be regarded as highly probable if the child exhibits clinical manifestations that are compatible with congenital toxoplasmosis. When only the mother's serum is available for examination because the child died before congenital toxoplasmosis was suspected, a dye-test titer of 1:256 or more in the mother's serum does not prove that the child had toxoplasmosis, but a negative test or a low titer in the mother's serum within three years after delivery indicates that the child did not have toxoplasmosis. The diagnosis of congenital toxoplasmosis cannot be made in the absence of dye-test antibodies in the child, regardless of how high the titer may be in the mother's serum.

It is the opinion of the Committee that at present the interpretation of the serologic tests in other conditions still constitutes a research problem. This applies to adult chorioretinitis and other eye conditions.

Isolation and/or demonstration of the Toxoplasma parasite is diagnostically significant.

Special Arrangements.—Reports and interpretation of laboratory tests done on specimens requiring special arrangements with the laboratory will be made when the results of those tests are obtained.

President's Letter

THESE THINGS I HAVE LIKED

This final month of office finds your president torn between relief at the prospect of surrendering to his capable successor the duties and obligations of his office, and regret at the termination of what has been a most happy and rewarding experience.

Traditionally, this is the time to review events, to advise, to predict. It is my pleasure to break with tradition and to leave unsaid all of the "oughts" and "musts" which might be pontificated. Instead, I should like to list a few of the things that I have liked about the Minnesota State Medical Association.

First, I have liked and admired the men who represent you, who give freely of their time and thought and who sacrifice profession, hobby and family to carry out the business and to wrestle with the problems of the Association.

Secondly, I have liked and admired the competency and devotion of our executive staffs. I am confident that few states can equal ours. I am convinced that none excels us. The contributions to our welfare which the executive secretary and the legal counsel have made in their years of service are greater than any can realize until they have worked closely with them.

I take pride in the harmonious relationship which has existed between rural and urban memberships over a period of many years despite the fact that at times their interests may seem divergent. Each has ever been considerate of the other.

I am pleased with the development of the newly organized Minnesota Academy of General Practice. That group is doing an excellent job of educating its members toward a constantly improving service to the public.

I am pleased to believe sincerely that unwholesome and immoral practices are nowhere common and, in fact, are rare in Minnesota. The overall quality of medical care in this state is excellent and is steadily improving.

The above are only some of the things I have liked about our State Medical Association. They may be listed as assets, but as assets, they are not to be viewed complacently, but rather nurtured in the fullest realization of their value.

Leadership and good sense predominate in this Association and will carry us over many rough roads and major hurdles in years to come.

Conrad J. Campbell

President, Minnesota State Medical Association

Editorial

Arthur H. Wells, M.D., *Editor;* George Earl, M.D., Henry L. Ulrich, M.D., *Associate Editors*

DISCIPLINING A DISCIPLINE

ONE ANSWER to the present rising crescendo of adverse criticism of our profession is a better organization and development of our methods of detecting and correcting irregularities and deficiencies. The public and the scandal sheets alike are not interested in our virtues. Our extensive efforts at raising ethical and educational standards as individuals and as organized groups probably cannot be duplicated by any other profession. If our present voluntary activities of self-discipline were for sale, like other valuable services, the cost would stagger the imagination. This continuous struggle to deliver the best to the patient so frequently meets with a disastrous exposure of our ranks to both the unscrupulous and the righteous among the laity, that one might pause and wonder whether it is worth the effort. Still, we must contribute more, especially as medical organizations, to correct the less than 5 per cent dishonesty and the more than 15 per cent professional intellectual apathy which exists among us.

The recently developed and successful "Medical Audit" of the medical staff of the Grant Hospital in Chicago deserves the careful consideration of practically every hospital staff in Minnesota. Here is the present pinnacle of self-disciplining procedure in both the moral and intellectual fields designed for our hospital organizations. The record or audit committee in the Grant Hospital reviews the charts of each patient for: (1) completeness and accuracy, (2) correctness and substantiation of final diagnosis, (3) detection of errors in diagnosis, treatment or judgment, (4) complications. Each of these four categories of medical care are sub-divided into several specific entries on printed cards. There eventually results a master card record of grades given the physician on many items of importance relating to his care of each of his hospitalized patients. If this continuous record reveals important deficiencies or irregularities, he may be warned or discharged from the staff. A physician's record is available only to designated persons and to himself.

Among the various benefits to the patient, the medical staff and the hospital which have resulted from the use of this plan is a correction of the present defective Specialty Board Approval Method of selecting a hospital medical staff. The Medical Audit assures the general practitioner and the self-trained specialist of a fair and impartial trial for a competitive place in the hospital staff.

The details of staff organization, operation of the audit plan, and the record forms used, have been made available for anyone caring to meet this greater challenge of self-disciplining which is now facing the medical profession.

THE ADOLESCENCE OF VIROLOGY

UNTIL recently, most of the laboratory methods for the diagnosis of virus diseases and the identification of specific viral agents, have been so cumbersome and time-consuming, that the information gained is generally past history or postmortem for the patient in question. Its value is primarily in the field of epidemiology. Your attention is directed to the excellent service offered in the field of virus diseases by our Minnesota Health Department as it is briefly portrayed by Dr. Henry Bauer elsewhere in this issue. The tests used are undoubtedly the standard procedures adopted by the best virology laboratories. Yet, for the most part, they are inadequate from a practical standpoint, and do not compare with our modern methods of laboratory diagnosis in bacteriology. It is entirely likely that this difference in the practicality of laboratory procedures pertaining to the diagnosis of viral and bacterial diseases will come to an end, and the larger private hospitals of the state will be rendering dependable twenty-four-hour diagnoses of a variety of viral diseases.

The large sums being poured into poliomyelitis research give intimations of soon paying off in practical knowledge, which in turn may have a wide application in the field of virus diseases. In 1949, Dr. John F. Enders of Harvard discovered a method of growing polio virus in test tube cultures of non-nervous tissue. Two tissue cultures of cells from a cancer of the cervix can now be inoculated with spinal fluid or other substances. One is protected by adding polio virus antiserum. In twenty-four hours, the presence of the virus will be indicated by a destruction of the cancer cells in the nonprotected culture. The protected control cells will be healthy and growing. Thus, the need of monkeys is eliminated except for occasional control tests in some research work.

Since this discovery, teams of scientists in different parts of the country have identified three types of polio virus capable of causing human disease. More recently, Dr. Jonas E. Salk of the University of Pittsburgh has used polio virus grown on kidney tissue and killed with formaldehyde to make vaccines which, when innoculated, have produced high antibody titers for the three strains of polio virus in hundreds of human beings. The laboratory techniques of growing the virus, identifying the virus, producing the best vaccines and testing the titer of antibodies are being rapidly improved. Surely, we can expect new and practical methods of identification and prophylactics of poliomyelitis and an application of the new methods to other virus diseases.

MEDICAL EDUCATION A LA CARTE

MORE than 700 U. S. physicians and their families will sail from New York, on January 6, to participate in an "inter-cultural exchange" with some 2500 physicians from twenty-two nations of the Western Hemisphere. This sixteen-day Medical Congress of the Pan American Medical Association will undoubtedly mix recreation with its studies in six South American cities and aboard ship en route from New York. Leaders in practically all fields of medicine will present papers each morning of the Congress on ship and ashore. The afternoons will be occupied by panel discussions, presentations of scientific exhibits, and the showing of sound and color films concerning new techniques and recent results in clinical and laboratory research.

Stratoplanes will carry physicians and their wives from San Francisco to Honolulu on the night of June 25—the closing day of the American Medical Association's annual convention. This planned thirteen-day tour includes flower leis, life on Waikiki Beach, scheduled motor trips, parties, and a return trip on the *S. S. Lurline.* Oh yes, there will be a semi-annual meeting of the Hawaii Medical Association.

Either of these trips might afford an intellectually stimulating vacation for a busy physician. (At least, a fellow can't be shot for dreaming.)

BECKER COUNTY BLOOD BANK

(Continued from Page 1245)

present membership, a member will be called for a blood deposit no more often than once in four years.

Conclusions

1. An adequate blood transfusion program conducted by a community blood bank is feasible for small communities.

2. An independent community blood bank affiliated with a larger consulting blood bank center offers advantages superior to any method which proposes to come into the community for a mass donation and then ship the blood back into the community as the needs arise.

3. An outline of a successful rural community blood bank has been presented.

Acknowledgments

In developing and expanding our project, we have received invaluable co-operation from many organizations. The American Legion and Women's Auxiliary should be mentioned specifically. They assisted in fund-raising projects for equipment; they contributed man-power to make the project a success. Sister Bennett, our Hospital Superintendent, gave us two rooms for blood bank headquarters and laboratory. Sister Ann and Sister Agnes, our technicians, have worked diligently and meticulously for success. To all of these and to others who have contributed support, we acknowledge our appreciation.

References

1. American Association of Blood Banks: Technical methods and procedures of the American Association of Blood Banks. 1953.
2. Borgerson, A. H.: A better rural transfusion program. Minn. Med., 33:773-775 (Aug.) 1950.
3. Matson, G. A., and Koucky, R. W.: A transfusion program for rural hospitals. Minn. Med., 35:430-433 (May) 1952.
4. Narvestad, Carl T.: Blood banks for rural towns. Med. Economics (May) 1951.
5. National Institutes of Health: Minimum requirements: Citrated whole blood (human). 3rd Revision. (Feb. 19) 1953.

The Dean's Page

THE DEPARTMENT OF PATHOLOGY

It is hard to realize that four years have passed since Dr. E. T. Bell retired as head of our Department of Pathology after thirty-nine years outstanding service to the University. Certainly few physicians in this state have been more widely respected and revered than "Tommy" Bell. Naturally, I am pleased to be able to report that Dr. Bell's successor, Dr. James Dawson, is doing an outstanding job. Many of you have already had a chance to meet him, and others of you will get to do so in the near future. I thought it would be of interest, however, to ask Dr. Dawson to tell you about recent activities in his department. Here is his report:

"The Department of Pathology is still in business at its ancient stand in the Institute of Anatomy. Our hopes to move into magnificent quarters in the new Mayo Memorial Building were not realized because of rising costs of construction. However, we will have some new space. Our surgical pathology laboratory, presently situated across from the main operating rooms, will move with the surgeons into the new Mayo Memorial where more adequate space will be available. Furthermore, plans have been completed for a new autopsy room on the ground floor near the ambulance entrance of the hospital. This room will be equipped with two new stainless steel autopsy tables and there will be more space to accommodate staff and students who wish to attend autopsies.

"These expanded facilities will enable us to utilize more satisfactorily the surgical specimens and the fresh autopsy material in our teaching program. The distance from our student laboratories to the surgical pathology laboratory and the autopsy room will still hinder us but the situation will be immeasurably improved when these new quarters are available. At present, fresh material is brought over to the Institute of Anatomy for demonstration to students but the shortcomings of this method are obvious.

"Establishment of the Bell Museum must also be held in abeyance until more space is available. The museum is desperately needed and the administration is aware of this fact. To this end a survey is being made to determine the best location for new space to satisfy the needs of our department.

"Despite our crowded quarters we have been able to maintain an excellent staff. Dr. Bell and Dr. Clawson still participate actively in departmental activities as emeritus professors. Next in seniority are Doctors McCartney, Hebbel, and Dawson. The younger staff offers great promise. First in this group is Dr. Paul Lober who graduated from the University of Minnesota Medical School in 1944. After a year's internship he began his training in Pathology under Dr. Bell acquiring his Ph.D. in Pathology in 1952. Dr. Lober has recently published an exhaustive review and an original study on the relation of aging to coronary arteriosclerosis. He is now in charge of the surgical pathology laboratory under the supervision of Doctors Hebbel and McCartney. Dr. Joel Brunson came to us from the University of Buffalo School of Medicine via Alabama, and he is in his third year at Minnesota. Besides his routine duties, he has devoted much time to teaching and to investigative work. He has recently published a paper emphasizing the common occurrence of coronary emboli in patients dying of bacterial endocarditis.

"Doctors Aurebeck and Winter have started their second year with us, and our newest fellows include Doctors Lyons, Connors, Eilers, and Goldberg. We are delighted to have Albert Ackroyd, Charles Gamble, and Robert Rydel working in our department during their optional time. Each of these men has just completed his second year in medical school and all are doing investigative work. The presence of these young people in our department augurs well for the future."

Harold S. Diehl
Dean of Medical Sciences
University of Minnesota

Medical Economics

Edited by the Committee on Medical Economics
of the
Minnesota State Medical Association
George Earl, M.D., Chairman

DIET FILM GETS GOOD RESPONSE

The entertaining cartoon film short, "Cheers for Chubby," produced by the Metropolitan Life Insurance company, has been well received throughout Minnesota.

The film tells the story of a couple who work together under a doctor's guidance to take off excess fat, and, as a result, lead healthier, happier lives. Told in an interesting and amusing manner, the film has received many favorable comments from theater audiences in the state.

Promotion for the film was aided by the Minnesota State Medical Association's Committee on Public Health Education. A total of nearly 200,000 Minnesotans have seen the film, and the showings are not quite completed. Of the 477 theaters in the state, 218 showed the colored cartoon, for a multiple total of 1,115 showings.

Comments on the picture ranged from "good" to "excellent" in the report on audience reaction from theater managers. A letter from the Metropolitan Life Insurance company regarding the completed program for the film in Minnesota, states:

> "It gives me great pleasure to send you the enclosed detailed report on the theater showings of *Cheers for Chubby,* our film on overweight, which were given under the auspices of the Minnesota State Medical Association in cooperation with the Minnesota Department of Health. As you will see, 45 per cent of the theaters in the state have shown the film. This is an excellent record and very much higher than we have ever done before. Credit for this is entirely due to the joint sponsorship of your Association and the above."

The Association's Committee on Public Health Education feels that films of this kind, well-produced and clearly presented, are of significant value in helping to keep the public informed on what medicine is doing to improve the health and welfare of people in the state and nation.

AMA STUDIES POSTGRADUATE MEDICAL EDUCATION

The Board of Trustees of the American Medical Association recently approved a special survey on postgraduate medical education. The survey will be made by the Council on Medical Education and Hospitals.

In order to get first-hand information from physicians themselves, the Council is distributing questionnaires to about 18,000 practicing doctors in all parts of the country. Physicians are asked to evaluate the various methods employed to keep them up to date in medicine—such things as medical publications, medical society meetings, postgraduate medical school courses, et cetera.

Different Approach

Previous studies of this nature, and the preliminary portion of the above survey, have undertaken to collect such data from medical schools, graduate medical schools, state and local medical societies, special medical societies, hospitals, clinics and other organizations.

But, according to a recent "Secretary's Letter" from Dr. George Lull of the AMA, "It became evident, however, that it would be necessary to canvass the views of practicing physicians in order to obtain answers to many important problems in this field." It is hoped that the study, when completed, will lead the way to an extension and improvement of the ways and means available for postgraduate medical education.

JUSTICE DEPARTMENT TO HANDLE VA FRAUD CASES

The United States Department of Justice will be called upon to handle cases of suspected fraud concerning the "inability to pay" declaration of veterans with non-service-connected disabilities. This is a new arrangement which is being put into effect by the Veterans Administration.

Under federal law, the VA is forbidden to look behind the veteran's statement that he cannot afford private treatment. Many abuses have resulted from this, according to testimony in Congressional hearings.

Details Explained

A recent issue of the AMA Washington Letter gives further information on how the plan will work:

> "The new arrangement provides that if a VA hospital manager has good grounds to suspect that the veteran's claim of indigency is fraudulent, he will confer with federal law-enforcement officials. An investigation will then be conducted by Justice Department, the regular law-enforcement arm of the federal government. If the facts justify prosecution, the case will be taken to federal court. There the government will have to prove that the veteran in question set out 'premeditatedly, purposefully and intentionally' to defraud the government."

Questionnaire Changed

Another development along this line is a recent announcement of the tightening up on the questionnaire filled out by veterans with non-service-connected conditions when he applies for VA hospitalization. The revised form calls for more information on the veteran's finances, in an effort to clamp down on those who are being given free hospitalization when they are actually able to pay. It should be noted that the Veterans Administration is required, by law, to provide the veteran with treatment if he signs the required form. However, he is subject to the above investigation if the hospital manager suspects that fraudulent motives are behind his action.

HEARINGS END ON MEDICAL RESEARCH FUNDS

Advocating increased funds for general medical research, numerous witnesses appeared recently before the hearing of the House Interstate and Foreign Commerce Committee. The hearing was the first of a series on major diseases in the United States. General comment was that funds should come from both public and private sources to combat heart disease, cancer, poliomyelitis, arthritis and rheumatism. Committee members also commented on the disparity between what is spent on medical research and on such things as liquor and cosmetics.

Chairman Sums Up

After the first week of hearings, Chairman Charles Wolverton, New Jersey, stated:

> "The committee has been concerned about the huge gaps in our research knowledge, about the astronomical economic loss and seemingly limitless human suffering caused by chronic illness, about shortages in trained scientific manpower and research facilities, about our inability to put into uniform practice all the preventive and control measures that are now known, and about the widespread lack of adequate measures to protect the rank and file of the American people from the economic burden of catastrophic illness."

Major Diseases Cost Up

All of the four groups of major diseases covered by the committee in its hearings on funds for research, cost the country staggering sums each year. In arthritis and rheumatism, the economic cost to the nation is estimated at well over $700 million a year, while medical care alone cost more than $100 million. Medical schools lack instructors and adequate facilities, and money should be made available for grants for (1) undergraduate teaching, (2) graduate training, and (3) construction grants for laboratories and clinical facilities in medical schools, according to the testimony.

The AMA Washington Letter sums up the other testimony on the remaining three major diseases considered:

> *Cancer*—Estimated cost of hospitalization for cancer patients ranges between $300,000,000 and $500,000,000 a year. About $50,000,000 of public and private funds will be spent on research this year. American Cancer Society as well as private groups say this amount is inadequate. Pressing needs include better diagnostic tests, research grants for periods longer than the usual one-year term and more cancer beds.
>
> *Heart Disease*—An estimated $2.1 billion was lost in 1951 in productivity as a result of heart disease. One estimate of annual hospitalization cost: $219,000,000. Research funds are said to be inadequate at a time when "there are sound reasons to believe that certain important solutions may be discovered reasonably soon."
>
> *Poliomyelitis*—Current needs include more diagnostic facilities, beds, nursing care and physiotherapy. More research should be done on why certain persons are stricken with the disease while others develop an apparent immunity. Office of Defense Mobilization expressed hope its gamma globulin allocation program this year "may soon give way to development of a suitable vaccine."

A Generous Congress?

Commenting on the problem that faces members of Congress because of increasing demands for more research funds, Representative Heselton of Massachusetts said he was staggered by the new estimates of needs contained in the proposed appropriation for the next fiscal year of the National Institutes of Health. This fiscal year, that group received $71,153,000 from Congress. He added: "We might as well be realistic about it. It isn't very likely Congress is going to appropriate 200 per cent more next year than this year."

INTERNS, RESIDENTS IN TRAINING DOUBLE

According to the twenty-seventh annual report on internships and residencies in the United States, prepared by the Council on Medical Education and Hospitals of the AMA, there are twice as many interns and resident physicians today completing their training and furthering the education through hospital work as there were prior to World War II. During 1952-53, there were 7,645 interns and 16,867 resident physicians on duty in the nation's hospitals, as compared to a total of approximately 12,000 in 1940.

Also, it should be noted that the number of hospitals offering approved intern training has increased 12 per cent during the last 10 years, from 760 to 856, while the number of internships available has risen 32 per cent, from 8,180 to 11,006, according to the report.

Ninety per cent of the internships offered were rotating internships, in which the intern spends two or more months in each of the major divisions of medicine—internal medicine, surgery, obstetrics-gynecology, and pediatrics. This type of internship is designed to prepare the doctor for general practice.

Residencies Increase

The report notes:

"During the year 1952-53, there were 4,635 residency programs conducted in 1,131 hospitals approved by the AMA. A total of 22,292 residency positions were available in these hospitals, 10,285 being first year appointments.

"The residency occupancy rate for all types of hospitals last year was 76 per cent. There was a total of 16,867 residents, 7,777 of whom were first year appointees. During the prior year, there were 15,851 residents, 6,376 of whom were first year appointees."

Certain specialty fields showed considerable increase in the number of residents entering each. The report states:

"During the last ten years there has been a marked increase in the number of residents entering certain specialty fields, reflecting the increased demand by the public for the services of these specialists. Considering first year appointments only, last year the largest number of residents, 1,533, entered the field of psychiatry. Internal medicine, with 1,352 residents, was second, and general surgery, with 1,256, was third."

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

230 Lowry Medical Arts Building
Saint Paul, Minnesota

E. M. Jones, M.D., Secretary

MINNEAPOLIS WOMAN MUST SERVE TWO-YEAR TERM AT SHAKOPEE FOR ABORTION

Re. State of Minnesota vs. Lillian M. Mullane

On October 2, 1953, Lillian M. Mullane, a 56-year-old widow, 9949 Maple Avenue, Bloomington, Minnesota, was sentenced by the Hon. Levi M. Hall, Judge of the District Court of Hennepin County, to a term of not to exceed two years in the Women's Reformatory at Shakopee, following her plea of guilty on August 17, 1953, to an information charging her with the crime of abortion. Just prior to being sentenced, the defendant had admitted having been twice previously convicted of felonies, the crime of grand larceny in the second degree on October 8, 1924, in McLeod County, Minnesota, and the crime of abortion on February 5, 1948, in Hennepin County.

In the present case, Mrs. Mullane was arrested by Minneapolis Police Officers, following the hospitalization of a 26-year-old Minneapolis divorcee in General Hospital who was ill as the result of having submitted to a criminal abortion. She had paid $150.00 for the abortion. On August 19, 1953, a complaint was issued in the Municipal Court of Minneapolis charging the defendant Mullane and Vern E. Jorgensen with the crime of abortion. A warrant has been issued for the arrest of Jorgensen, but as yet he has not been apprehended. Jorgensen, 40, 5345 13th Avenue South, Minneapolis, was previously charged with the crime of abortion in the same case in which the defendant Mullane was convicted on February 5, 1948. He had previously entered a plea of guilty in Hennepin County District Court and on the latter date he was sentenced to a four-year prison term, which was stayed and he was placed on probation for five years. The defendant Mullane was also placed on probation for a period of five years, but she was required to serve the first year of her sentence in the Minneapolis Women's Detention Home.

The Minnesota State Board of Medical Examiners opposed probation for the defendant Mullane in this case because of her long record in the abortion racket. Judge Hall refused to place her on probation and she must therefore serve her sentence.

History of Medicine In Minnesota

MEDICAL HISTORY OF THE COUNTY OF YELLOW MEDICINE

MILDRED B. LEE
Granite Falls, Minnesota

(Continued from November issue)

Jared Waldo Daniels was born in Stratford, New Hampshire, on June 15, 1827. On completion of his elementary education in his home town he began his medical education in New York. After graduation he came west to Minnesota and was appointed physician to the Indians at the Upper Sioux Agency on the Yellow Medicine River in 1854. His brother, Dr. Asa Wilder Daniels, was at the same time physician at the Lower Agency at Redwood.

Dr. Daniels served as physician at the Agency for five years, during which time he gave medical attention to the members of the tribes and became very influential among them. When the civil war began both Dr. Daniels and his brother resigned in the expectation of going South with some of the regiments. After a lapse of a few months Dr. Daniels was appointed assistant surgeon to the Sixth Minnesota Infantry, but instead of going South this military unit became involved in the Sioux Uprising. Dr. Daniels served under General Sibley until the conclusion of the hostilities, and then was assigned as surgeon to the expedition sent west against the hostile western tribes. The Sixth Infantry became part of a force headed by General Alfred Sully and known as the Second Minnesota Cavalry. This contingent left Fort Snelling in May, 1864, accompanied as far as Fort Ridgely by General H. H. Sibley and his staff and a military band mounted on white ponies. On June 5, the expedition camped at Wood Lake on the site of the last battle of the Sioux uprising, and continued westward by way of what is now Watertown to the edge of the Bad Lands, where there was an engagement, then on to the Little Missouri and down the east bank of the Yellowstone. Dr. Daniels, serving as surgeon with the rank of major, made this report of the health of the soldiers en route:

> "During the Indian Campaign of 1864, the Second Cavalry endured extremes of temperature varying from 105 degrees in the shade to 6 above with snow and blizzard. The prevailing diseases were diarrhoea, dysentery, rheumatism, and mountain fever. On the march to Fort Ridgely and Fort Rice we had good water and scarcely any illness. At Fort Rice where we arrived July 11, and were encamped one week, there was a large number of cases of sickness, the result of indiscretion in the use of the post trader's supplies, and not of bad water. The June rains gave us good running water in all the streams until we crossed the Little Missouri River and we had very few on the sick list. Three camps were made between the Little Missouri and the Yellowstone, where the water was bad, and many on sick report. . . . Water was found only in pools, and was impregnated with sulphate magnesia or alkali. In many cases the disease assumed a typhoid condition within twenty-four hours after being reported. The health of the men was much better when they could get the fruit of the country, with plenty of game, an improvement on that furnished by the commissary department. In treatment of mountain fever, sulphate of quinine was an indispensable remedy. Given in doses of from 15 to 30 grains in twenty-four hours, it acts as a sedative, and its

febrifuge virtues are very perceptible. Brandy, with quinine, was given with caution. The mortality of the campaign was two killed by Indians while on picket duty, three on hospital boats, and two died in camp."*

Dr. Daniels was mustered out November 19, 1865. Having great influence with the Indians he returned to this work and became inspector of Indian Agencies. In 1877 he retired from public service and settled in Faribault. In 1900 he removed to Los Angeles where he died May 3, 1904.

Dr. J. Woodbury Donnell came to Clarkfield about 1895. He had received his medical education at Hamline University, graduating in 1884. His birthplace was Richmond, Maine.

Not much was known of Dr. Donnell's past history or of his family. He was a single man, moody, and inclined to drink to excess at times. He assisted in the operation of the B. H. Lewis Drug Store, over which he had both offices and living quarters.

In 1896, Dr. Donnell was elected county coroner, an office which he held until his death.

All that was known about Dr. Donnell was summed up in the obituary published June 16, 1898, in the *Clarkfield Advocate.*

> "The people of Clarkfield were shocked last Friday evening by the news that Dr. J. W. Donnell had committed suicide. It seems that about 6 o'clock Friday evening when Dr. Kerkhoff went to make a professional call on Donnell, who was confined to his room above the Clarkfield Drug Store with sickness, he found him lying on a cot, weltering in his own blood, which was flowing from a cut in the right side of his throat. He immediately called Druggist Lewis to his assistance, and he with several other citizens hurried to the room while the wound was being sewed up. Donnell said he wished he had finished the job better. He bade goodbye to the bystanders, told them he had taken poison and to notify his brother in Maine. He then became unconscious and in a few minutes was dead.
>
> An examination showed that the internal jugular vein had been severed, the instrument used being a pocket scissors, one point of which was broken off. He was found in convulsions, indicating he had taken strychnine. His parents were notified and the body shipped to Maine."

Dr. Donnell was forty-seven years of age, unmarried, and had lived in Clarkfield three years. He had served as health officer and as county physician for that medical district, and at the time of his death was county coroner.

John O. Dyrnes was born May 5, 1867 on the island of Smolen in Northwestern Norway, the third child of Ole Arntzen Dyrnes and his wife Anne Martha (Johnson) Dyrnes. In infancy he was small and weak, but grew up to be a normal child except that he was quite nearsighted.

From earliest years he showed an interest in study. His parents were poor farmers and the only instruction afforded was that given to groups of children in homes, but religious instruction was not neglected. The father died of brain fever in 1873 leaving the widow and three young children to fend for themselves. When the oldest son, Anton, was of an age to go he emigrated to the United States and settled in Ashland, Wisconsin; in 1883 John, then sixteen years of age, joined him, and at first worked in a planing mill. When due to economic conditions the mill shut down John worked in the woods, for a grocer, and at whatever he could find, but he never lost his desire for an education.

In the course of his various jobs he was told of the schools in Saint Paul, and

---

*From *Minnesota in the Civil and Indian Wars.*

recommended for a job as stable boy and general worker to a railroad executive. But he found it impossible to attend the public school and work at the same time; he was now a grown man who would be out of place in a grade school. Then he heard of Baldwin Seminary, which was a private school affiliated with the Presbyterian Church (later Macalester College) and he was able to attend this school by working as janitor.

John O. Dyrnes entered Augsburg Seminary in the fall of 1889 and graduated in 1892. It was his desire to become a foreign missionary, and with that in mind he entered the Theological Department of Augsburg in the fall of 1892 and graduated in 1895. While studying theology he also took up the study of medicine at the Minneapolis College of Physicians and Surgeons, then connected with Hamline University. He graduated with his medical degree in 1898.

There being no post available for him as a medical missionary at that time Dr. Dyrnes located at Hanley Falls where a friend, Rev. Strand, was pastor of the Lutheran Church. He also practiced at Morris, Minnesota. He seems to have been a busy doctor in Hanley Falls, taking care of accident cases, being called to various places, and frequently visiting in Minneapolis.

Late in the year 1899, Dr. Dyrnes received his call to enter mission service, and left for Paris in February, 1899. There he studied French and continued his study of medicine in order to receive his medical degree from the University of Paris, which was required in order to be able to practice medicine in the French colony of Madagascar. Before leaving Paris he was ordained to the Christian ministry.

Dr. Dyrnes arrived at Manasoa, Madagascar, on September 1, 1900. He was at once struck by the poor housing of the mission and the pathetically large number of graves in the cemetery of missionaries who had come to an early death at this place, so his first efforts were directed at providing better housing and creating better health conditions for the missionaries. In August, 1901, he had his first attack of the deathly blackwater fever, but recovered; and soon afterward his house burned down with all his medical books, instruments, and other possessions.

Dr. Dyrnes presided over a clinic at which he treated throngs of natives afflicted with every kind of ailment. According to the rules of the Lutheran church, natives who could pay were supposed to do so, and the money to accrue to the church. But Dr. Dyrnes was no stickler for rules. He said he could of course follow this rule, if the mission only had a large enough box for the offering. "For then I could put into it every rooster, every little bunch of bananas, or every bowlful of rice which I might receive for medical services." Asked what he would do then, he said, "I would have my cook make a good meal for the sick, or for the poor whom we always have with us. And should it ever happen that we have more roosters than we have persons in need of a good meal, I have never had any conscientious scruples in enjoying a good meal myself from part of my fees."

On June 7, 1906, Dr. Dyrnes was married to Miss Sarah Johnson of Lowry, Minnesota. The marriage took place in Tulear, Madagascar, immediately after her arrival. Mrs. Dyrnes was a very able and devoted helpmate and was herself a missionary.

In appearance Dr. Dyrnes was a rather tall man, with light curly hair, blue eyes, rather prominent nose and chin, a true Nordic type. At the time of his graduation from medical school in 1897 he wore a small mustache and appears to have been a nice looking young man. He was always cheerful and had a fine sense of humor. "Dr. Dyrnes' humor was genuine and contagious. He had a way of seeing and pointing out to others the bright side of any situation."

In 1919, Dr. Dyrnes went back to Minneapolis on furlough, but was eager to get back to his work. The mission board did not request his return when he reached the normal retirement age because he felt that Madagascar was his real home and he wished to remain there. In 1937, Dr. and Mrs. Dyrnes decided to make a brief visit home, and had gone so far as to get passports for it. But on November 20, Sarah Dyrnes died of septicaemia after a brief illness. At the time Dr. Dyrnes was away on tour, and the news was slow in reaching him, so he did not reach her bedside until she had lapsed into unconsciousness.

Although his health failed, he continued with his work.

By 1943 his sight had begun to fail, and an eye specialist diagnosed his case as diabetic cataract. His hearing had also failed somewhat but he continued to serve in the little grass churches and at the district meetings as much as he could. He suffered a great deal of pain in his legs, and developed diabetic gangrene. This responded to treatment when a fresh supply of American insulin was received, but he still suffered much pain. On December 7, 1943, he died.

Dr. Dyrnes served as a medical missionary for forty-three years and three months at Manasoa. He was buried there, in a grave beside his wife. The natives had made a coffin of beautiful hardwood.

A memorial service to Dr. Dyrnes was held in Trinity Lutheran Church in Minneapolis, to which Dr. Dyrnes had belonged in his youth there.

From the Memorial Address of Melvin A. Helland:

> "His interests were varied. Nothing human was outside his interests, and he was always trying to better conditions for others. Better homes for the missionary staff; better ways of living for the natives; the introduction of new sources of food, and better ways of tilling the soil; he was concerned about all these. And the fact that he was interested in the welfare of others, added to his medical aid, won him many friends and several very faithful native helpers.
>
> "One of these (interests) was planting. The gardens at Manasoa are a source of wonder to those who know how hard it is to keep a garden in such a place. . . . Many have been surprised to see a row of about a dozen high cocoanut trees 100 miles inland, for they usually are found only near the sea. Years ago a native brought three guava trees that he wanted to sell and the doctor gave him the equivalent of a dollar for each tree. The natives thought he was throwing his money away, but today guava trees are found near most of the villages and the natives like the fruit. . . . He experimented with different kinds of fruits and plants and also with European cattle.
>
> "There is an old wooden building at Manasoa, which for many years was used as a dispensary. It is built on posts to keep it up from the ground. On the south side, the shady side, there is a stone step of three or four risers. The stones have been worn more than half through by the bare feet of those who came for help. This is a fitting monument. Men needed him and he ministered to their need."*

Dr. E. N. Falk was in Minnesota Falls in 1873, but his place of origin or subsequent history is unknown. He practiced there until about 1876 or possibly 1878, and since he was never licensed in Minnesota it is probable that he removed from the state about that time.

Dr. Falk became Dr. Stratton's partner in a drug store and also in establishing the first newspaper of the county, the *Minnesota Sentinel*. His professional card, along with that of Dr. W. M. Stratton, appeared in the *Sentinel* but not in any later paper. The minutes of county board meetings mention Dr. Stratton and Dr. Falk as claimants for various amounts due for services performed—usually amputations—for the poor, but there is no mention of him after 1878.

---

*Andreas Helland, *Missionary John O. Dyrnes, M.D.*

Herman E. Farnsworth was born in Clinton County, New York, in 1856, and came to Minnesota with his parents when he was thirteen years old. The family settled in Goodhue County, Minnesota, where the boy completed his elementary education. In 1876 he entered Rush Medical College in Chicago and graduated in 1879.

Dr. Farnsworth began his medical practice in Canby, Minnesota, in 1880, in partnership with Dr. M. G. McLean. Dr. McLean left Canby shortly after 1880 and Dr. Farnsworth thereafter continued to practice alone.

On September 15, 1881, Dr. Farnsworth married Mary E. Wells, daughter of Perry Wells, a pioneer settler of the county. The marriage took place at the home of Rev. H. P. Satchwell, a Methodist minister who resided in East Granite Falls.

The doctor's offices were over Gerald's Drug Store. Following the great blizzard of October 15, 1880, he was called to attend Michael J. Dowling, who had been lost in the storm for two days. With the assistance of Dr. Andrews of Marshall Dr. Farnsworth amputated the legs of the boy above the knee, all the fingers of one hand, and the left arm. In spite of the seriousness of the operation young Dowling made a fine recovery and eventually became one of the state's most outstanding citizens.

In January of that year Dr. Farnsworth was named county physician for the western part of the county, and continued in this position until his death. He died November 10, 1883, of "inflammation of the bowels," leaving his wife Mary, and two children, one and three years old, Florence E. and Lottie E. Farnsworth. Mary Farnsworth did not long survive her husband. She died before probate proceedings in Dr. Farnsworth's estate could be completed, and the two children were placed in the care of Noah Farnsworth of Zumbrota.

At the time of his death Dr. Farnsworth was twenty-seven years old. Mary E. Farnsworth died May 5, 1884.

Cyrus P. Fuller was born in New York state in 1842, the son of Mr. and Mrs. Cyrus P. Fuller. He came to Minnesota with his parents at the age of fourteen, and settled at Hastings, Minnesota. In the course of his education he became a druggist and engaged in that business for a time. Then he went to Philadelphia to study medicine. After graduation he returned to Hastings and conducted a drug business until the fall of 1874 when he went to Granite Falls.

The doctor's offices in Granite Falls were located in the building described as being "first door south of Drug Store." He was the second doctor to locate in this city, and he built up a good practice and a good reputation for medical skill, as shown by the Christmas verses printed in the *Granite Falls Journal* of 1877, and reprinted in 1888, referred to elsewhere.

Dr. Fuller brought with him to Granite Falls his wife, Ada, and his son John P. Fuller, who was a boy of eight or nine at the time. In due time they acquired a home at the address which is now 260 Tenth Avenue.

Dr. and Mrs. Fuller were well educated and highly respected in the community. They were of the type generally referred to as "intellectual." Mrs. Fuller naturally became a member of the Hisperian Club, whose membership seems to have included the elite of the period. Its purpose was to study the plays of William Shakespeare, and sometimes the members acted out the plays also. As an indication of the seriousness of their purpose, the club officers also included a critic, and Mrs. Fuller served in this capacity.

In 1877, Dr. Fuller was appointed county physician. Apparently he was the first doctor to be formally appointed to that position.

In August, 1879, Dr. Fuller through some mishap received an injury which resulted in "gangren poisoning." The last entry in his drug account was of August 12, 1879, and he died August 18.

The claims filed against his small estate indicate that Dr. Fuller and Dr. Stratton were partners although they did not advertise as such. A claim for drugs and medicines sold to Drs. Fuller and Stratton was supported by the affidavit of Marion Gould, druggist, as to the partnership; but there were also individual claims, and claims for livery service, materials for the repair of his home, and necessities. During probate proceedings the homestead on Lot 10, Block 29, was sold to "provide for the care and education" of John P. Fuller, then fourteen years of age.

Mrs. Fuller and John continued to reside in Granite Falls for many years. It appears that Mrs. Fuller was occasionally employed for clerical work, and the mother and son managed to support themselves by their own efforts. In her later years she was admitted to the Jones-Harrison Home in Minneapolis, where she lived until her death.

(To be continued in January issue)

U. S. CHAMBER CHARTS GROWTH OF COMMERCIAL HEALTH INSURANCE

A United States Chamber of Commerce survey of commercial insurance companies and societies shows these organizations are making steady progress in selling individual hospital, medical, and surgical insurance policies. Not included in the survey are Blue Cross, Blue Shield, mutual benefit associations, salary-continuance plans, union benefit plans, and other methods of voluntary group coverage. Thus the findings do not show the total extent of coverage. The study covered 1952, and is based on information or estimates from 233 firms or societies issuing individual policies. By type of insurance, the survey showed:

Medical Expense (excluding surgery): The highest percentage increase, 21 per cent, from 4.2 millions covered in 1951 to 5.1 millions in 1952. *Surgical Insurance*: The largest numerical increase, with 2.8 millions more covered, from 16.4 million to 19.2 million, a percentage increase of 17 per cent. *Hospitalization*: Most popular of all, it increased 10.1 per cent from a coverage of 21.6 million in 1951 to 22.3 million in 1952, or a numerical increase of 700,000. *Disability Insurance* (payments to workers kept from the job by sickness or accident): Only a slight increase, from 12.5 millions covered to 12.6 millions.

This was the first time the Chamber surveyed the new *catastrophic* insurance so it was not possible to establish a rate of growth. At the end of 1952 more than 156,000 persons were covered by catastrophic insurance, which complements the usual hospitalization, surgical and medical policies by paying 70 or 80 per cent of the additional cost up to a usual maximum of $10,000. (A complete survey of the growth of all health insurance will be released in a few weeks by the Health Insurance Council.)

The report was printed in *American Economic Security* (Vol. 10, No. 5). Reprints are available at no cost at the U. S. Chamber of Commerce, Washington, D. C.

(The Council on Pharmacy and Chemistry of the American Medical Association has adopted the following statement which appears in New and Nonofficial Remedies, 1953, Philadelphia, J. B. Lippincott Company, pp. 171-173, 1953.)

METHANTHELINE BROMIDE.—*Banthīne Bromide (Searle)*

β-Diethylmethylaminoethyl 9-xanthenecarboxylate bromide

Actions and Uses.—Methantheline bromide, a parasympatholytic agent, produces the peripheral action of anticholinergic drugs such as atropine and the ganglionic blocking action of drugs such as tetraethylammonium chloride. Tolerated amounts of methantheline bromide exert side effects typical of atropine-like drugs, but cause less tachycardia, and also cause less postural hypotension than does tetraethylammonium chloride. Toxic doses produce a curare-like action at the somatic neuromuscular junction.

Clinical studies indicate that the drug effectively inhibits motility of the gastro-intestinal and genito-urinary tracts and, to a variable degree, diminishes the volume of perspiration and salivary, gastric, and pancreatic secretions. It also decreases mucoprotein secretion. Like atropine, it produces mydriasis and cycloplegia when applied locally to the eye or administered systemically, but until more clinical evidence becomes available, its local use for this purpose is not recommended. The value of the drug for preventing abnormal cardiac reflexes through the vagus during thoracic surgery, or as an agent for routine preoperative medication in place of atropine, requires further investigation before final conclusions can be reached.

Methantheline bromide is indicated for clinical use whenever anticholinergic spasmolytic action is desired, provided it is not contraindicated because of its atropine-like characteristics or because of a patient's intolerance to the unavoidable side effects of such therapy. It is useful as an adjunct in the management of peptic ulcer, chronic hypertrophic gastritis, certain less specific forms of gastritis, pylorospasm, hyperemesis gravidarum, biliary dyskinesia, acute and chronic pancreatitis, hypermotility of the small intestine not associated with organic change, ileostomies, spastic colon (mucous colitis, irritable bowel), diverticulitis, ureteral and urinary bladder spasm, hyperhidrosis or control of normal sweating which aggravates certain dermatoses, and control of salivation.

Methantheline bromide produces some degree of cycloplegia and mydriasis in therapeutic doses and therefore should not be administered to patients with glaucoma. It sometimes decreases the ability to read fine print. Xerostomia (dryness of the mouth) is a common, sometimes transient, side effect. Urinary retention of varying degrees may occur in elderly male patients with prostatic hypertrophy, and some patients may have difficulty emptying the rectum. Patients with edematous duodenal ulceration may experience nausea and vomiting during initial administration of the drug. These patients should take only liquids during the institution of drug therapy. All patients should be advised of the possible occurrence of side effects. Overdosage sufficient to produce a curare-like action may be counteracted by prompt subcutaneous injection of 2 mg. of neostigmine methylsulfate.

Dosage.—Methantheline bromide is administered orally or parenterally by either the intramuscular or intravenous route. Parenteral administration is not advised for patients able to take the drug orally. The average initial dose for adults, oral or parenteral, is 50 mg. For patients with considerable intolerance, 25 mg. may be employed. In the management of peptic ulcer, a beginning schedule of 50 mg. three times daily before meals, and 100 to 150 mg. on retiring is suggested. However, the usual effective dose is 100 mg. four times daily, although some patients may require more or less than this amount. The dosage may be increased to tolerance, using dryness of the mouth as a guide, and adjusted to meet the individual response of patients. Maintenance dosage in peptic ulcer is usually considered to be about one-half the therapeutic level. In the management of other hypermotile or hypersecretory states, the dosage should be adjusted to the smallest amount which will relieve the symptoms. When spastic conditions are secondary to inflammatory or other organic lesions, therapy directed toward the cause should be employed whenever possible.

G. D. SEARLE & CO.
Powder Banthīne Bromide: 2 cc. ampuls. 50 mg.
Tablets Banthīne Bromide: 50 mg.

◆ Reports and Announcements ◆

MINNESOTA ACADEMY OF OCCUPATIONAL MEDICINE AND SURGERY

A new organization of industrial physicians, called the Minnesota Academy of Occupational Medicine and Surgery, was organized at a dinner meeting held October 1, 1953, at the Minneapolis Club. The purpose of the new organization is to bring together members, of whom there are now fifty-two, for presentation of papers and informal discussions on subjects of mutual interest in the field of occupational medicine and surgery.

The organization dinner was held the night before the Upper Midwest Industrial Health Conference and the program included, beside the business meeting, a motion picture and an address by Dr. Robert E. Priest of Minneapolis on occupational hearing loss.

Officers of the new organization are: Wilford E. Park, M.D., Industrial Physician of the Minneapolis Health Department, president; John F. Shronts, M.D., Medical Director of General Mills, Minneapolis, vice president; Leslie W. Foker, M.D., Minneapolis, secretary; Herman E. Drill, M.D., Hopkins, recorder; James R. Fox, M.D., Minneapolis, treasurer. Executive board members are Edwin G. Benjamin, Minneapolis, for a two-year term and Leonard S. Arling, Minneapolis, for a one-year term.

Representatives from Duluth, the Iron Range, Austin, and South Saint Paul attended the organization meeting, as well as Twin City physicians. Out-of-state guests were Dr. Edward C. Holmblad, Managing Director of the Industrial Medical Association, Chicago; Dr. Daniel E. Dorchester, Sturgeon Bay, Wisconsin; Dr. H. Glenn Gardner, East Chicago, Indiana, and Dr. C. H. Johnston, Des Moines, Iowa.

ANNUAL PHI DELTA EPSILON LECTURESHIP

The annual Phi Delta Epsilon lectureship will be given by Dr. Mark M. Ravitch, Director, Department of Surgery, Mount Sinai Hospital, New York City, on "Present Concepts in the Management of Intussusception," January 7, 1954, 8 p.m., at Owre amphitheater.

INDUSTRIAL MEDICINE FELLOWSHIPS

The Institute of Industrial Health of the University of Cincinnati will accept applications for a limited number of Fellowships, offered to qualified candidates who wish to pursue a graduate course of instruction in preparation for the practice of Industrial Medicine. Any registered physician, who is a graduate of a Class A medical school, and who has completed satisfactorily at least two years of training in a hospital accredited by the American Medical Association, may apply for a Fellowship in the Institute of Industrial Health. (Service in the Armed Forces or private practice may be substituted for one year of training.)

The course of instruction consists of a two-year period of intensive training in Industrial Medicine, followed by one year of practical experience under adequate supervision in industry. Candidates who satisfactorily complete the course of study will be awarded the degree of Doctor of Industrial Medicine.

During the first two years, the stipends for the Fellowship vary, in accordance with the marital status of the individual, from $2,100 to $2,700 in the first year and $2,400 to $3,000 in the second year. In the third year the candidate will be compensated for his service by the industry in which he is completing his training.

A one-year course, without stipend, is also offered to qualified applicants.

Requests for additional information should be addressed to the Institute of Industrial Health, College of Medicine, Eden and Bethesda, Cincinnati 19, Ohio.

ASSOCIATION FOR RESEARCH IN OPHTHALMOLOGY

The Midwest Section of the Association for Research in Ophthalmology will hold its annual meeting February 7, 1954, at the University of Chicago, School of Medicine, Chicago, Illinois.

Papers of clinical and basic interest will be presented with many presentations of a preliminary nature. Dr. Theodore F. Schlaegel, of the Department of Ophthalmology, University of Indiana, is chairman.

The meeting will be preceded by the annual clinical conference of the Chicago Ophthalmological Society, which will be held February 5 and 6, 1954, at the Drake Hotel.

HEART PROGRAM OVER KUOM

"How's Your Heart?" a series of thirteen programs dealing with the human heart—its diseases and cures, is now being presented over University of Minnesota radio station KUOM. The show is aired at noon Thursdays.

Planned in co-operation with the Minnesota Heart association, and its director, G. Ray Higgins, "How's Your Heart?" is a fifteen-minute interview program which features guest experts who tell the story of heart diseases, cures and symptoms. The series will run through January 7, 1954.

The speakers and problems already discussed are Dr. Paul F. Dwan, clinical associate professor of pediatrics in the University medical school, "Rheumatic Fever" (November 5); Higgins on "What the Minnesota Heart Association Can Do for You," November 19; Dr. Ancel Keys, director of the University's laboratory of physiological hygiene, "Arterial Sclerosis," November 26 and December 3.

Future programs include Dr. Frank Hirschbeck, Duluth, "Chest Pain and Heart Disease," December 10; Dr. Tom Dry, member of the Mayo Clinic staff, Rochester, "Congenital Heart Disease," December 13 and 24. Two programs on hypertension are scheduled for December 31 and January 7.

The audience can participate in the shows by sending questions to "How's Your Heart?" to KUOM, Eddy hall, University of Minnesota. Dr. Charles N. Hensel, Saint Paul, who appeared on the first two programs and who has arranged for the other specialists to speak on the series, will devote certain programs to answering questions.

Michael Canfield of the KUOM staff serves as host for the programs, asking questions and introducing the guests.

ELIAS P. LYON MEMORIAL LECTURE

Professor Bernardo A. Houssay, 1947 Nobel prize winner in physiology and medicine, director of the Instituto de Biologia y Medicina Experimental, Buenos Aires, Argentina, spoke at the University of Minnesota, November 3. "Action of Sex Hormones in Experimental Diabetes" was the subject of the annual Elias P. Lyon memorial lecture which Dr. Houssay presented in the Owre amphitheater. The Lyon lectures are given annually in memory of Elias P. Lyon, former dean of the University's medical school. Dr. Houssay is a long-time leader in the opposition to Juan Peron's government in Argentina.

ALUMNI ASSOCIATION OF THE MAYO FOUNDATION

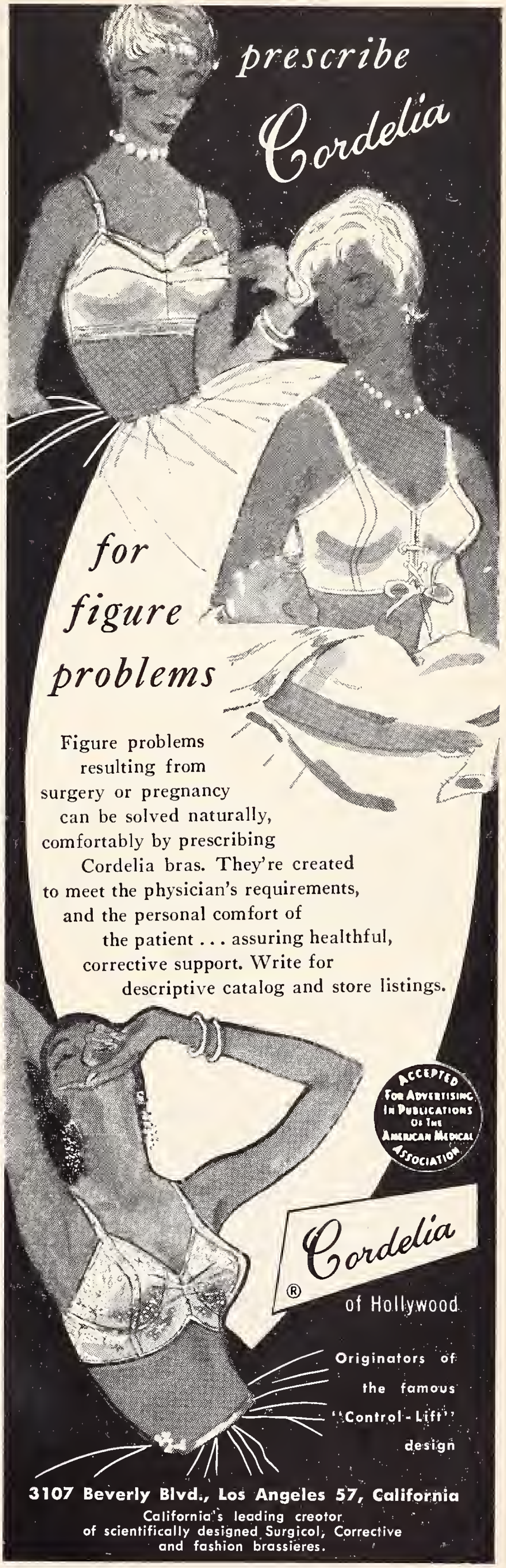
The twenty-ninth annual reunion of the Alumni Association of the Mayo Foundation was held the first of October with the following elections: Dr. Walter C. MacKenzie, Edmonton, Alberta, Canada, president; Dr. Shirley C. Lyons, New Orleans, Louisiana, first vice president; Dr. Miles Griffin, Berkeley, California, second vice president, and Dr. George Logan, Rochester, associate secretary and treasurer. Officers re-elected were Dr. Donald C. Balfour, Rochester, honorary president, and Dr. James F. Weir, Rochester, secretary.

Dr. Robert C. Bahn, native of Newark, New Jersey, now assistant to the Mayo Clinic staff in pathology, was given the annual Alumni Award in recognition of his research work on sex hormones of the human pituitary gland.

POSTGRADUATE COURSE IN DIABETES AND BASIC METABOLIC PROBLEMS

The second Postgraduate Course in Diabetes and Basic Metabolic Problems to be conducted by the American Diabetes Association will be offered at Rochester, Minnesota, January 18-20, 1954, under the directorship of Edward H. Rynearson, M.D., and Randall G. Sprague, M.D., consulting physicians, Section of Medicine, Mayo Clinic; Professors of Medicine, Mayo Foundation, Graduate School, University of Minnesota, Rochester, Minnesota.

Highlights of the course will be lectures by Charles



prescribe
Cordelia
for figure problems
Figure problems resulting from surgery or pregnancy can be solved naturally, comfortably by prescribing Cordelia bras. They're created to meet the physician's requirements, and the personal comfort of the patient . . . assuring healthful, corrective support. Write for descriptive catalog and store listings.

Accepted For Advertising In Publications Of The American Medical Association
Cordelia® of Hollywood
Originators of the famous "Control-Lift" design

3107 Beverly Blvd., Los Angeles 57, California
California's leading creator of scientifically designed Surgical, Corrective and fashion brassieres.

H. Best, C.B.E., M.D., F.R.S., co-discoverer of insulin, professor of physiology; director and professor in the Banting and Best Department of Medical Research, University of Toronto; and by Joseph Hoet, M.D., professor and head of medicine, University of Louvain, Louvain, Belgium. Dr. Best's subject is "About the Pancreas" and Dr. Hoet will give a lecture on "Prediabetes in Pregnancy."

There will be a total of over thirty-five lectures and round-table discussions. The first day of the course (January 18) will be devoted to the "Clinical Aspects of Diabetes." Dr. Best will be chairman of the morning session and Dr. Bortz will moderate the afternoon program.

"Complications of Diabetes" will be the subject of Tuesday's (January 19) program and Dr. Arthur R. Colwell of Chicago and Dr. Frank N. Allan of Boston will be chairmen of the morning and afternoon sessions, respectively.

The (January 20) morning program, headed by Dr. E. Perry McCullagh of Cleveland will be on the subject of "Nutritional Requirements and Diet in Diabetes." Dr. Randall G. Sprague, who is also president of the American Diabetes Association, will preside over the Wednesday afternoon session which will include a number of special topics such as hyperinsulinism and insulin malingering.

A dinner will be held on Monday evening, January 18, which will feature "A Practical and Metaphysical Demonstration of Visual Acuity Versus Manual Dexterity" by Oliver H. Beahrs, M.D., Ph.D. (in Prestidigitation) of the Mayo Clinic and Mayo Foundation. Tours of the Medical Sciences Building and the Mayo Clinic New Building will be conducted on Tuesday and Wednesday afternoons.

The course is open to non-member physicians as well as members of the American Diabetes Association, but the number of registrants will be limited to 125. Fees are $40 to members, $75 to non-members. Details of the three-day program and registration and hotel information may be obtained from J. Richard Connelly, Executive Director, American Diabetes Association, 11 West 42nd Street, New York 36, New York.

POSTGRADUATE COURSE ON DISEASES OF THE CHEST

The Council on Postgraduate Medical Education of the American College of Chest Physicians, in co-operation with the respective state chapters of the College as well as the staffs and faculties of the local hospitals and medical schools, will sponsor the second Regional Postgraduate Course on Diseases of the Chest in New Orleans, Louisiana, February 15 to 19, 1954. The Seventh Annual Postgraduate Course on Diseases of the Chest will be held at the Bellevue-Stratford Hotel, Philadelphia, Pennsylvania, March 15 to 19, 1954.

These postgraduate courses endeavor to bring physicians up to date on recent advancements in the diagnosis and treatment of heart and lung disease. Tuition for each course is $75.

Further information may be secured by writing to

ANNUAL CLINICAL CONFERENCE

CHICAGO MEDICAL SOCIETY

March 2, 3, 4, 5, 1954 • *Palmer House, Chicago*

DAILY HALF-HOUR LECTURES BY OUTSTANDING TEACHERS AND SPEAKERS on subjects of interest to both general practitioner and specialist.

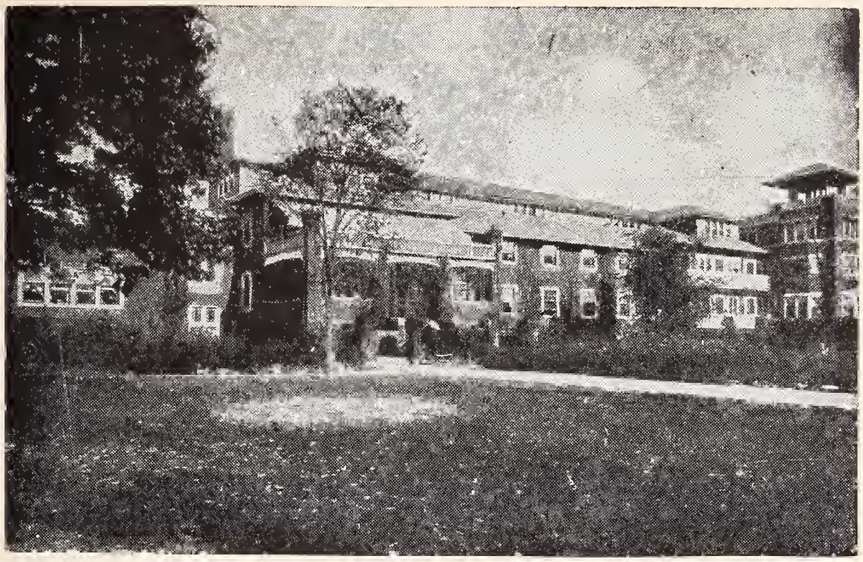
PANELS ON TIMELY TOPICS.

MEDICAL COLOR TELECASTS.

TEACHING DEMONSTRATIONS.

SCIENTIFIC EXHIBITS worthy of real study and helpful and time-saving **TECHNICAL EXHIBITS.**

The CHICAGO MEDICAL SOCIETY ANNUAL CLINICAL CONFERENCE should be a MUST on the calendar of every physician. Plan now to attend and make your reservation at the Palmer House.



North Shore Health Resort

Winnetka, Illinois

on the Shores of Lake Michigan

A completely equipped sanitarium for the care of
nervous and mental disorders, alcoholism and drug addiction
offering all forms of treatment, including electric shock.

SAMUEL LIEBMAN, M.S., M.D.

225 Sheridan Road **Medical Director** **Phone Winnetka 6-0211**

the Executive Director, American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Illinois.

CONTINUATION COURSES

The University of Minnesota will present a course in *Neurology for General Physicians and Specialists* from January 25 to 30, 1954, in the Center for Continuation Study.

Diagnosis and management of the more commonly-met neurological disorders will be stressed. The guest faculty will include Dr. Madison H. Thomas, chairman, neurology section, Department of Psychiatry, University of Utah; Dr. A. Theodore Steegman, professor and chief, Department of Neurology, University of Kansas Medical Center, and Dr. Adolph L. Sahs, professor and head, Department of Neurology, University of Iowa Medical School. As an integral part of the course, the annual John B. Johnston Lecture will be presented on the evening of January 27 by Dr. Andrew T. Rasmussen, professor emeritus of anatomy, University of Minnesota Medical School. The course will be presented under the direction of Dr. A. B. Baker, professor and director of Neurology, who will be joined by other members of the faculty of the University of Minnesota Medical School and the Mayo Foundation.

* * *

A course in *Child Psychiatry for General Physicians, Pediatricians, and Psychiatrists* will be presented by the University of Minnesota next February 1 to 5, 1954. The course will consist principally of small-group discussions of common problems led by recognized experts in the field. A minimum of didactic lecture material will be presented. The guest faculty will include Dr. Sherman Little, director, Orthopsychiatric Department, Children's Hospital, Buffalo; Dr. Mabel Ross, mental health consultant, U. S. Public Health Service, New York City; and Dr. Henry H. Work, assistant professor of Pediatrics and Psychiatry, University of Louisville Medical School. The course will be presented under the direction of Dr. Reynold A. Jensen, professor, Department of Psychiatry and Pediatrics, at the University of Minnesota Medical School.

* * *

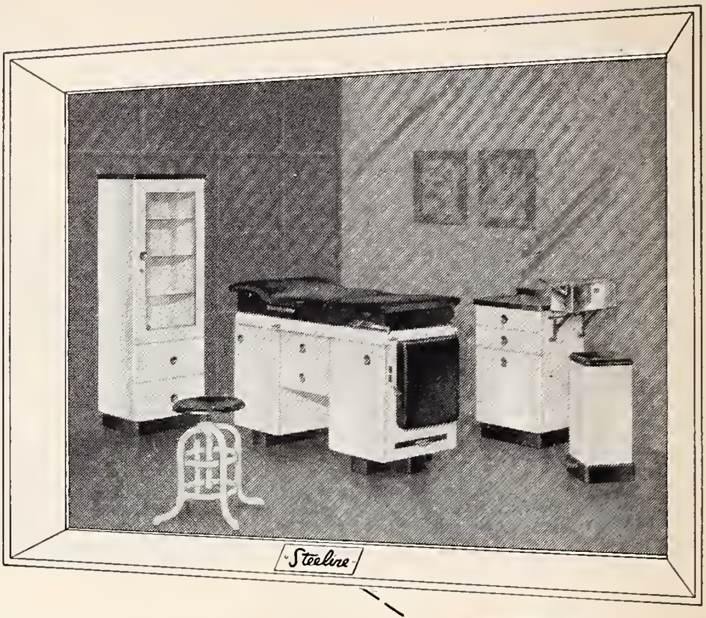
A two-day course in *Cancer Detection for General Physicians* will be presented February 10 and 11, 1954, under the auspices of the University of Minnesota and the Minnesota Division of the American Cancer Society. Physicians who register for the program will spend their time in the University's Cancer Detection Center where they will observe and participate in the diagnostic activities. The Medical School's new cancer research unit, the Lyon Laboratories, will be dedicated February 11, and registrants will be invited to attend the dedication program and dinner. Housing accommodations will be available at the Center for Continuation Study as usual.

* * *

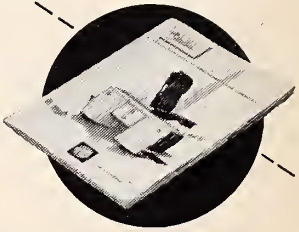
The University of Minnesota will present a course in *Fundamental Advances in Internal Medicine for Internists* at the Center for Continuation Study, February 15 to 17, 1954. Basic concepts in the fields of

design achievement
in treatment room furniture

New Steeline has gone through fifteen years of gradual development to reach the fine degree of design perfection it now has. The suggestions of scores of physicians and the engineering skill of our own production plant have been combined to produce this outstanding treatment room equipment. New features such as foam rubber cushioned contour top, magnetic door latches, concealed paper sheeting holder, superb color finishes, etc., are all fully described and illustrated in our new full-color brochure—send for yours today.



FREE . . . 16-page full-color brochure complete with specifications — send for your copy today.



A. S. ALOE COMPANY OF MINNESOTA • 927 Portland Avenue • Minneapolis 4, Minnesota

infectious disease, gastroenterology, and hematology will be discussed. The faculty will include Dr. Walter Lincoln Palmer, professor, Department of Medicine, University of Chicago School of Medicine, and Dr. David Shemin, associate professor, Department of Biochemistry, Columbia University College of Physicians and Surgeons, New York City. Dr. Shemin will also present the annual Journal-Lancet Lecture February 16. The course will be presented under the direction of Dr. Cecil J. Watson, professor and head, Department of Medicine, and the remainder of the faculty will be made up of members of the University of Minnesota Medical School.

* * *

The University of Minnesota will present a *Conference on the Infertility Problem for Physicians,* next February 18 to 20, 1954, at the Center for Continuation Study. The course, which has been designed to meet the needs of those physicians who are frequently consulted by infertile couples, will take up this problem from a number of standpoints. Medical and gynecologic procedures in the diagnosis and management of a sterility problem will be stressed. In addition, fertility control and genetic aspects of infertility will be considered, and adoption procedures will be the subject of a panel discussion. Guest speaker will be Dr. Alan F. Guttmacher, director of the department of obstetrics and gynecology, Mount Sinai Hospital, New York City, a recognized authority in this field. The conference will be presented under the direction of Dr. John L. McKelvey, professor and head, and Dr. Louis L. Freidman, clinical instructor of the department of obstetrics and gynecology of the University of Minnesota Medical School.

* * *

A continuation course in *Clincal Dietetics for Dietitians* will be presented by the University of Minnesota at the Center for Continuation Study, March 4 to 6, 1954. Important advances in dietetics, including the relationship of diet to vascular disease, will be stressed. The course will be presented under the direction of Miss Gertrude I. Thomas, Director of Nutrition and Professor of Dietetics.

KANDIYOHI-SWIFT-MEEKER COUNTY SOCIETY

Thirty-five members attended the October meeting of the Kandiyohi-Swift-Meeker County Medical Society at the Willmar Country Club, October 22, 1953. Following the dinner, Dr. Elmer T. Cedar, of Minneapolis, addressed the members on "The Treatment of Miscellaneous Dermatoses in Office Practice." Nominations for officers for 1954 were presented for final action at the November meeting; also an application for membership.

Dr. C. Walton Lillehei, of the University of Minnesota medical school staff, addressed the meeting held November 19 on "Gastrointestinal Hemorrhage and Its Treatment." Officers were elected at this meeting as follows:

President—R. P. Griffin, M.D., Benson
President-elect—D. L. Jacobs, M.D., Willmar
Secretary-Treasurer—L. J. Opsahl, M.D., Willmar
Delegate (MSMA)—W. E. Macklin, Jr., M.D., Willmar
Alternate Delegate (MSMA)—E. J. Kaufman, M.D., Willmar
Censor (1954-56)—D. E. Dille, M.D., Litchfield

SOUTHWESTERN MINNESOTA MEDICAL SOCIETY

Election of officers for the Southwestern Minnesota Medical Society was held November 2, at the Pipestone Country Club at Worthington. Elections were as follows: Dr. R. F. Pierson, Slayton, president; Dr. R. P. Hallin, Worthington, president-elect; Dr. H. A. Christensen, Jackson, vice president; and Dr. O. M. Hedberg, Worthington, secretary (re-elected). Dr. Paul Adams, Jr., University of Minnesota, spoke on "Newer Advances in Pediatrics."

WABASHA COUNTY MEDICAL SOCIETY

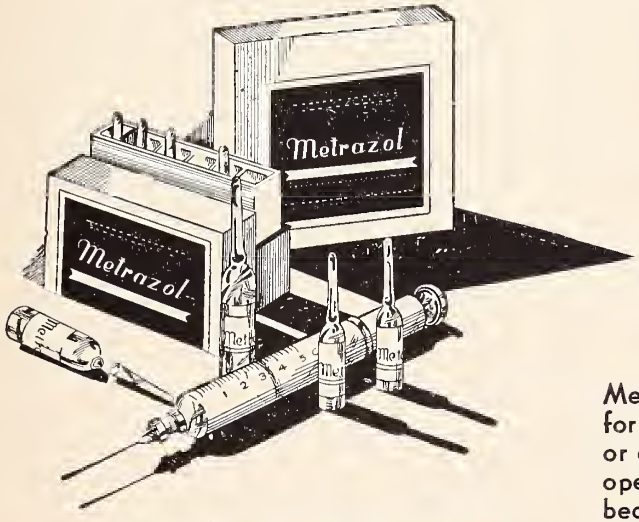
The Wabasha County Medical Society elected the following officers at its eighty-fifth annual meeting at Wabasha, October 8: Dr. C. G. Ochsner, president; Dr. Earl W. Ellis, vice president; Dr. E. C. Bayley, delegate to the Minnesota State Medical Society; Dr. W. P. Gjerde, member of Board of Censors; Dr. B. A. Flesche was re-elected secretary-treasurer. Dr. John M. Waugh, Dr. Robert Kierland, and Dr. Edward H. Juers with their wives, were among the guests. The evening meeting was held at the home of Dr. LeRoy M. Ekstrand.

THE DYNAMICS OF EMOTIONS

(Continued from Page 1233)

and electrolytes and all the enormously complex physiologic capacities of which we have only imperfect knowledge. While the external environment is perhaps more familiar to us in general, it is nonetheless equally complex—made up of parents and siblings and life experiences of success and failure and love, hope, aspiration, conflict and the rest. These environments are in a constant ferment of change, and we learn to live with change and develop techniques for nullifying the drastic effects of it. Anxiety is the conscious experience of that change. Hence our predisposition to greater or lesser anxiety is a function of all the ingredients of both these environments, as well as the magnitudes and suddenness of the changes which take place.

These, then, are some of the dynamics of emotions—obviously overly condensed and simplified to the point where they bear only a distant resemblance to the actual phenomena themselves. But even in this faint resemblance, if we look, we can catch a glimpse of our patients and their problems.



Metrazol

A DEPENDABLE, QUICK-ACTING CEREBRAL AND MEDULLARY STIMULANT

Metrazol, pentamethylentetrazol
Ampules, 1 cc. and 3 cc.
Sterile Solution, 30 cc. vials
Tablets and Powder

Metrazol is indicated for narcotic depression, for instance, in poisoning with barbiturates or opiates, in acute alcoholism and during the operation and postoperatively when respiration becomes inadequate because of medullary depression due to the anesthetic.

Inject 3 cc. Metrazol intravenously, repeat if necessary, and continue with 1 or 2 cc. intramuscularly as required.

Bilhuber-Knoll Corp. Orange, N. J.

Woman's Auxiliary

A TRIBUTE TO OUR DOCTORS

Throughout the years, the advancement of medicine has been slow at times, rapid at others. Always its concern has been the maintenance of high standards of practice while contributing ever greater service to the human race. Each generation of physicians has made progress in this great task.

Today, we pause to evaluate our generation of professional men and women and their labors. As young people, they entered the practice of medicine, little realizing the personal sacrifice they and their families would have to make. The challenge has proved to be far greater than most had anticipated, yet they have met it quietly and with assurance.

They are called upon to study and treat the mental, spiritual, and emotional as well as the physical ills of their patients, with all the understanding and ability at their command. Monetary returns cannot adequately compensate for this. They give their best efforts with kindness and concern for the individual patient, no matter how poor or lowly. Constantly called upon in addition, for civic and community work, they try to meet these requests so far as their time permits. The public fails to appreciate these many and varied efforts, principally because they do not understand the doctor's life as we do. They do not visualize the man; they think only of the physician. But we who do know should help others to realize more fully the heavy responsibilities, the deep concern, the sleepless nights, the long hours, the eternal patience, the selflessness, and the human qualities of our doctors.

They are exceptional men and women who merit the appreciation of all. We, of the Auxiliary, want them to know that they have not only our appreciation but also our loyalty and admiration.

Mrs. Virgil J. Schwartz
Minneapolis

FALL SCHOOL OF INSTRUCTION DRAWS RECORD ATTENDANCE

Auxiliary members from all over the state attended the 1953 School of Instruction held by the Woman's Auxiliary of the Minnesota State Medical Association at the Curtis Hotel in Minneapolis, October 30.

Highlights of an unusually interesting program included two panels, one of them on public relations and the other on recruiting for careers allied to medicine, two important addresses and greetings from two distinguished out-of-state visitors.

For those who were unable to attend, some of the valuable and important suggestions and information given at this meeting are summarized below.

Bill Ingram, KSTP-TV news commentator, initiated the first panel with a definition of public relations. He called it the art of acquainting the customer with the personality of the producer as well as the product itself. "The Doctor's code of ethics needs decoding," he said, "and a large share of the burden is placed on the doctor's wife."

These are Mr. Ingram's suggestions for the doctor's wife.

First, she should persuade her husband, his office staff, and hospital personnel of the importance of keeping a warm, personal interest in the patient and his family. Lack of an appearance of that kind of interest has produced the current dip in popularity of the doctor as compared with the affection, amounting to adulation, of the past when the doctor took time to be friendly and interested.

Second, she should preach constantly to others the tremendous progress of American medicine as contrasted with European ineptness and the European philosophy of the unimportance of the individual.

Mr. Ingram called attention to the fact, also, that doctors are said to be turned out in twelve months behind the Iron Curtain.

Understanding Urged

Mrs. Sherle Lowe, Minneapolis public relations expert, also presented some practical suggestions for the doctor's wife. The first was that the doctor's own warmth and interest in his patients is likely to be a reflection of the warmth and understanding of his wife. Mrs. Lowe stated that, since records are kept of the total philanthropies of all the professions, wives could well add their own contributions to those of their husbands so that a true record of medical generosity could be shown. She also suggested that Auxiliary members should watch for errors of a medical nature in the press. They should see that letters are written to the editor immediately to correct wrong impressions. Her concluding suggestion was directed to the personal conduct of the doctor's wife. "Be humble" she told the doctors' wives. "Avoid pretense in clothes, speech or manner. Faults like these will surely undo all the back-breaking work and self-denial of your husbands."

Dr. Robert N. Barr, of the Minnesota Department of Health, acted as moderator of the panel on recruiting for allied medical careers. He presented representatives of four of the associated professions allied to medicine, all of whom besought the aid of the women.

Nurses, Technicians Needed

Miss Ruth Hovde, president-elect of the American Society of Medical Technologists, suggested that the Auxiliary consider establishing scholarships for medical technologists to stimulate recruiting. Also that Career Days be held by the Auxiliary in each area to tell high school students about opportunities in the field.

Mr. John Watson, past president of the Minnesota

ACCIDENT • HOSPITAL • SICKNESS

INSURANCE

For Physicians, Surgeons, Dentists Exclusively

ALL PREMIUMS COME FROM PHYSICIANS SURGEONS DENTISTS ALL CLAIMS GO TO

$5,000 accidental death Quarterly $8.00 **$25 weekly indemnity, accident and sickness**	**$15,000 accidental death Quarterly $24.00** **$75 weekly indemnity, accident and sickness**
$10,000 accidental death Quarterly $16.00 **$50 weekly indemnity, accident and sickness**	**$20,000 accidental death Quarterly $32.00** **$100 weekly indemnity, accident and sickness**

COST HAS NEVER EXCEEDED AMOUNTS SHOWN

ALSO HOSPITAL INSURANCE

	Single	Double	Triple	Quadruple
60 days in Hospital	5.00 per day	10.00 per day	15.00 per day	20.00 per day
30 days of Nurse at Home	5.00 per day	10.00 per day	15.00 per day	20.00 per day
Laboratory Fees in Hospital	5.00	10.00	15.00	20.00
Operating Room in Hospital	10.00	20.00	30.00	40.00
Anesthetic in Hospital	10.00	20.00	30.00	40.00
X-Ray in Hospital	10.00	20.00	30.00	40.00
Medicines in Hospital	10.00	20.00	30.00	40.00
Ambulance to or from Hospital	10.00	20.00	30.00	40.00
COSTS (Quarterly)				
Adult	2.50	5.00	7.50	10.00
Child to age 19	1.50	3.00	4.50	6.00
Child over age 19	2.50	5.00	7.50	10.00

$4,000,000.00
INVESTED ASSETS

PHYSICIANS CASUALTY ASSOCIATION
PHYSICIANS HEALTH ASSOCIATION
51 years under the same management
400 First National Bank Building
Omaha 2, Nebraska

$19,500,000.00
PAID FOR CLAIMS

$200,000.00 deposited with State of Nebraska for protection of our members

Society of X-Ray Technicians, told the women that there are ten unfilled openings for every x-ray technician graduated in Minnesota. He emphasized the importance of Miss Hovde's suggestion for Health Days or Career Days or even for high school teas to impress the needs upon high school graduates. Mr. Watson offered to arrange for speakers at such meetings and Miss Berdine Thompson offered booklets, films and speakers on behalf of nurse-recruiting for the same purpose. Miss Thompson, who is associate executive secretary of the Minnesota Nurses Association, promised every assistance in her power, including speakers for any type of meeting, but she asked that Auxiliary members provide transportation for the speakers in their area meetings since the nurses' organization funds are limited for this purpose. Miss Thompson also besought the doctors' wives to see that no doctor ever says anything harmful which will be overheard and quoted like this: "No daughter of mine will ever be a nurse."

Mr. C. E. Caven, who is co-ordinator of the Hospital Program of the Minnesota Department of Health, gave an over-all picture of personnel shortages in the hospitals of the state. There were 8,000 new hospital beds built in Minnesota last year, he said, and they require staffing.

Aging Gracefully

Dr. E. L. Tuohy, of Duluth, philosopher and wit, had a personal message for the women. His title was "Growing Old Gracefully" and he held a hilarious audience spellbound in the last program period before lunch.

"Don't worry if you are not buoyantly healthy," Dr. Tuohy told his listeners. "Few people are at any age.

"You can also allow yourselves to be a little eccentric without worrying too much about it, providing you don't make nuisances of yourselves."

A nation's use of its leisure time determines its civilization, Dr. Tuohy also pointed out, and a good many Americans have too much wrongly used leisure time. Furthermore, an easy conscience is essential to health and happiness at any age.

"To stay well," he said in conclusion, "don't struggle for the unattainable. Reduce your desire for material things and remember that a happy life is a life of service to others."

Governor Also Urges Recruiting

Luncheon speakers were Governor C. Elmer Anderson and Mrs. Leo J. Schaefer of Salina, Kansas, president of the Woman's Auxiliary of the American Medical Association. Governor Anderson warmly seconded the importance of persuading young people to enter all the service fields including teaching as well as nursing and allied medical careers, adding a special note of his own: "Please make these young people happy by welcoming them into your homes occasionally, too," he said.

Mrs. Schaefer called for more members in the Auxil-

THE
MEDICAL PROTECTIVE
COMPANY
FORT WAYNE, INDIANA

PROFESSIONAL PROTECTION
EXCLUSIVELY
SINCE 1899

specialized service
assures *"know-how"*

MINNEAPOLIS Office:
Robert L. McFerran, Rep.,
2426 Clinton Ave. So., Apt. E-8,
Telephone Fillmore 1292

AT YOUR CONVENIENCE, DOCTOR . . .

you are cordially invited to visit our new and modern prescription pharmacy located on the street floor of the Foshay Tower, 100 South Ninth Street.

With our expanded facilities we will be able to increase and extend the service we have been privileged to perform for the medical profession over the past years.

Exclusive Prescription Pharmacy

Biologicals Pharmaceuticals Dressings
Surgical Instruments Rubber Sundries

JOSEPH E. DAHL CO.
(Two Locations)
100 South Ninth Street, LaSalle Medical Bldg.
ATlantic 5445 Minneapolis

iary. "With 140,000 men in the American Medical Association and only 64,000 wives in the Auxiliary, there are too many bachelors in medicine," she said.

Climax of the session was an address by Mr. Aubrey Gates, field director of the Council of Rural Health of the American Medical Association, whose outline of the part doctors' wives must play in the national, as well as the rural, health program was pointed and effective.

"Medicine's greatest allies are rural people," Mr. Gates said. "That is true in spite of the fact that the forces opposed to our system of medicine and of government are making a tremendous effort to ensnare the farmer in socialism.

"Actually, it is the farmer who is likely to decide the future of America and a well-laid, long-planned scheme has been underway for a long time to influence the farmers. Certainly, the farmer's judgment is no better than his information. And you, as doctors' wives, must help to provide for him the right information.

"Use your Health Days and all your channels of public relations to tell people what you want them to know about your husband—that is, about medicine in America. Tell them about the tremendous progress made in America in comparison with foreign lands. Tell them that 20 years have been added to the average life span in America, that our children are taller and heavier because of our progress in medicine and nutrition.

"Support the hospitals and the recruitment drives for personnel; develop speakers' bureaus of your own; do everything in your power to spread warmth and understanding for the medical profession by your own service to your community, your church and to youth activities, generally. Remember how much more important these things are than purely social activities and how much more satisfaction you will have, as a by-product, from service to others."

Mr. Gates listed a number of organizations including the 4-H Clubs, the Parent-Teacher organizations, the Farm Bureau and the National Grange, all of which are staunch allies and friends of medicine, he said.

MRS. LEONARD S. ARLING, *Minneapolis*

MENTAL HEALTH WORK

In the opinion of Secretary Hobby, the nation is making slow progress in caring for its mentally ill. Talking at the opening of the Greater Kansas City Mental Health Foundation, the head of the Department of Health, Education, and Welfare declared:

"We have a pitiful array of organized help, only 420,000 beds when we need at least 750,000. Half our mental hospitals are overcrowded as much as 20 per cent, and some of our mental hospitals are overcrowded as much as 50 per cent. The average American mental hospital has less than half as many doctors as it needs, only a fourth as many registered nurses as it needs, only one-fourth as many psychiatric social workers as it needs. . . . Nationally, our hope of treating mental illness on any sort of thorough basis remains frustrated. First, by the lack of enough facilities to apply the knowledge we now have; and second by the lack of scientific research to find new, easier, quicker, less expensive and surer ways of treating mental illness."

In Memoriam

FRED L. BREGEL

Dr. Fred L. Bregel, formerly of St. James, Minnesota, died in Saint Paul after a short illness, Friday, November 13, 1953, at the age of sixty-four.

Dr. Bregel practiced medicine for twenty-nine years in St. James, but for the past eleven months had been employed with the rating board of the Veterans Administration at Fort Snelling.

He was born in Fairfax, Minnesota, and received his medical degree from the University of Minnesota medical school. After a teaching fellowship in medicine at the University Hospital, he joined Base Hospital 26 AEF and, later, an American Red Cross Commission which kept him in Europe until 1921. He entered general practice in St. James in 1923.

Surviving are his wife, Mrs. Cecilia Bregel; two daughters, Monica of Saint Paul, and Mrs. Lee Ball of Zumbrota; a son, Charles, of Saint Paul; two grandchildren, six brothers, and one sister.

EDWARD McCLINTOCK ELSEY

Dr. Edward McClintock Elsey was killed in a hunting accident at Blackduck, Minnesota, on Saturday, November 14, 1953, the first day of the 1953 deer hunting season. He was fifty years old and had practiced medicine at Glenwood, Minnesota, for thirty-three years.

Dr. Elsey was the son of Dr. James R. Elsey, who has also practiced at Glenwood since shortly after the turn of the century and who survives him. He was born at Chokio, Minnesota, and went to school in Glenwood. He received his Bachelor of Science degree at Geneva College in Beaver Falls, Pennsylvania, from which his father, also, was graduated. He received his medical degree from the University of Minnesota medical school and returned to Glenwood to practice after a year's internship at Minneapolis General Hospital. He was a member of the West Central Minnesota Medical Society, the Minnesota State Medical Association and the American Medical Association.

In addition to his father, Dr. Elsey is survived by his wife, Mrs. Gwen Vye Elsey, and three children.

BERT M. McIVER

Dr. Bert M. McIver of Lowry, Minnesota, died at the age of fifty-nine, Saturday, October 31, 1953, at the Glenwood Community Hospital.

Dr. McIver engaged in general practice at Lowry from 1929 until 1950 when he joined the Elsey-McIver Clinic in Glenwood. He was born at Lowry, went to school in Sauk Center, and received his medical degree from the University of Minnesota medical school. After serving his internship at St. Luke's Hospital in Duluth, he took a year's postgraduate study at the University of Illinois.

He was a leader in medical and civic affairs in his community and served as president of the West Central Minnesota Medical Society in 1929. He was also a member of the American Medical Association and the Minnesota State Medical Association. He had been chief of staff of the Glenwood Hospital from 1940 when it was organized, until his death. He served with the U. S. Army Medical Corps during World War II.

His wife, Gertrude McIver, survives him together with five children, including Jessie, Beth and Danny, all of Lowry; Paul, a student at the University of Minnesota, and Bertrand, stationed at Fort Sill, Oklahoma. Three sisters and two brothers also survive: Margaret of Lowry; Mrs. Howard Lysen, of Lowry; Mrs. William Haigh of New York City; George and John McIver of Farwell.

OSCAR F. MELLBY

Dr. Oscar F. Mellby, pioneer physician and long a leading citizen of Thief River Falls, died on November 14, 1953, at the age of seventy-seven.

He had retired from active practice only a month before, with the hope that he could return to his practice after a period of rest and recuperation, in the spring.

Dr. Mellby first went to Thief River Falls as a young practitioner of thirty-one and only a few years out of medical school. He carried on an extensive and typical "horse-and-buggy" practice in the country-side around the town and, at the same time, took a leading part in civic, social and church affairs of the community.

He served at various times as president of the school board, the park board and the Parent-Teachers Association and he was a member of the State Board of Health for nine years. He was president of the local Rotary Club and he acted as health officer or city physician during most of his years of practice. He was president for three years of the Northern Minnesota Lutheran Brotherhood and a trustee and member of the board of deacons of Trinity Lutheran Church for many years.

When the Oak Park Sanatorium Commission was formed in 1916, Dr. Mellby was a member. He served that commission as president, too, for many years, and was the only original member remaining on the board at the time of his death. He was also the oldest living member of the Civic and Commerce Association, having joined a fore-runner of the association in 1907.

He served medical organizations of the county and district with distinction and was elected the first president of the Pennington County Medical Society when it was organized as a separate county organization in 1950. He was elected president of the Northern Minnesota Medical Association in 1938 and he served as president of the Physicians' Hospital Association governing Physicians' Hospital in Thief River Falls. He was a member of the Minnesota State Medical Association and the American Medical Association. In 1952, he became a member of the Fifty Club of the State Medical Association, all of whose members have practiced at least fifty years in Minnesota.

On June 30, 1947, the citizens of Thief River Falls united in celebrating "Dr. Mellby Day" in recognition of his forty years of service to their community. Climax of the observance was a dinner at which Dr. James L. Morrill, president of the University of Minnesota, gave the principal address.

Dr. Mellby was born at New Richland, Minnesota, and was graduated from St. Olaf Academy high school and St. Olaf College at Northfield. He studied medicine at the old Hamline Medical College which later united with the University of Minnesota medical school. He received his medical degree in 1901 and served his internship at Ancker Hospital in Saint Paul. Before going to Thief River Falls he practiced at Willmar, Warren and Argyle. His father was the Reverend Ole Andreas Mellby, a graduate of the University of Christiania, who came to America as pastor of a LeSueur River congregation with a circuit of nine churches in 1872.

Surviving are his wife, Mrs. Sigrid Mellby; two sons, Paul of Angola, Indiana, and Erling of Long Prairie, Minnesota; a brother, Dr. Carl Mellby, and a sister, Mrs. Marie Horneland, both of Northfield.

GEORGE H. SCHLESSELMAN

Dr. George H. Schlesselman, who practiced medicine for many years at Anoka, died at Swedish Hospital in Minneapolis, November 3, 1953. He was sixty-eight years old.

Dr. Schlesselman was born at Bremen, Indiana, and received his medical degree from Hahnemann College in Chicago in 1913. He served his internship at Leo Hospital in Rochester, New York. After a few years of practice in Chicago and in Fond du Lac, Wisconsin, and two years' service in the U. S. Army in World War I, he moved to Good Thunder, Minnesota, in 1922, and, from there, to Anoka in 1927. He retired from active practice in Anoka in 1949 and joined the staff of the Anoka State Hospital, with which he was still affiliated at the time of his death.

Dr. Schlesselman was a member of the East Central Minnesota Medical Society which he served as president in 1938, the Minnesota State Medical Association and the American Medical Association. He was also president of the Blue Earth County Medical Society in 1928. He was a member of the staff of the Swedish Hospital in Minneapolis for twenty-five years. He was also one of the founders of the Anoka Kiwanis Club and took a leading part in many civic enterprises in Anoka.

He is survived by his wife, Mrs. Jessie A. Schlesselman; a sister, Mrs. William C. Brandt of Denver, Coloradio; and a brother, Carl F. Schlesselman of Pasadena, California.

CLEVE RIDLON SENESCALL

Dr. Cleve Ridlon Senescall who practiced for twelve years at Sleepy Eye, Minnesota, died at Enumclaw, Washington, late in October. He was sixty-five years old.

Dr. Senescall moved with his family from Sleepy Eye to Tacoma, Washington, in 1943 and joined the Bridge Clinic there. Later he established an office by himself at Enumclaw. He is survived by his wife and one son, Cleve, of Seattle, Washington.

HUGH J. TUNSTEAD

Dr. Hugh J. Tunstead, who practiced obstetrics and gynecology for many years in Minneapolis, died Sunday, November 29, 1953, at the age of seventy-seven.

Dr. Tunstead received his medical degree from the University of Minnesota, College of Homeopathic Medicine, in 1901. He became a member of the Hennepin County Medical Society in 1909 and was voted a life member of the Hennepin County Medical Society and of the Minnesota State Medical Association in 1949. He became a member of the Fifty Club, all members of which have practiced medicine for fifty years in Minnesota, in 1951. He was also a member of the American Medical Association.

Dr. Tunstead is survived by two sons, Edward B. and Charles W., both of Minneapolis, a nephew and two grandchildren.

HOMEWOOD HOSPITAL is one of the Northwest's outstanding hospitals for the treatment of Nnervous Disorders equipped with all the essentials for rendering high-grade service to patient and physician.

Operated in Connection with Glenwood Hills Hospitals

HOMEWOOD HOSPITAL

Corner Penn and Plymouth Avenues North

Minneapolis Minnesota

THE SHELTERING ARMS

4330 River Road, Minneapolis 6, Minnesota

A HOSPITAL FOR TREATMENT OF POLIOMYELITIS

Acute and Convalescent

Fully Approved by American College of Surgeons
Modern treatment—Staff includes Kenny trained technicians

USE

Q-Test

The One Hour Pregnancy Diagnosis

BROWN & DAY, INC.

St. Paul 1, Minn.

◆ Of General Interest ◆

The problem of personnel at the Holy Trinity Hospital, Norfolk, Nebraska, has been solved by the full co-operation of the local people in forming an association of twenty-two nurses from the vicinity to help the sisters. The hospital, staffed ordinarily by sisters of the Missionary Benedictine Order, has had personnel shortages because the order, with headquarters in Germany, has not been able to send the needed sisters to maintain a full community. The hospital has always been in excellent financial condition since its founding in 1914. This report comes from **Dr. I. L. Oliver**, Graceville, who recently visited the institution.

* * *

Dr. Carl J. Potthoff, appointed medical consultant to the Midwest Region, National Foundation for Infantile Paralysis, is the first regional consultant named for this area, which includes Minnesota, Iowa, Kansas, Nebraska, North and South Dakota, Montana and Alaska. Dr. Potthoff will be responsible for the 564 chapters of the National Foundation in this area, and will work in close co-operation with state, county and city medical societies and health authorities.

Dr. Potthoff was graduated from the University of Minnesota College of Medicine in 1933; later, he served eight years as associate professor of biological sciences at the University. He left in 1946 to join the American Red Cross in Washington, D. C., working there until he went to Albuquerque, New Mexico, on a special assignment for the Department of the Interior for a year. He will make Rochester, Minnesota, his headquarters.

* * *

Dr. Ezra V. Bridges, medical supervisor of Mineral Springs Sanatorium, Cannon Falls, spoke at the Pine Island Parent-Teacher Association, October 21. Dr. Bridges pointed out ways in which tuberculosis is discovered, and stressed the importance of the Mantoux test for children. He used x-rays and slides to illustrate his topic.

* * *

Dr. N. J. Berkwitz, medical director for the Community Mental Health Center in Albert Lea, recently addressed the Mower County Medical Society at their monthly meeting. His topic was "The Community Mental Health Center—Functions and Goals."

* * *

Dr. Kathleen B. Jordan, Granite Falls, spoke at the fortieth annual meeting of the Mississippi Valley Conference on Tuberculosis and the Mississippi Valley Trudeau Society, held in Minneapolis, October 16. She said: "With oncoming generations being more protected from contact with contagious tuberculosis, the age of the average patient has advanced"; making tuberculosis a disease of middle age and older folk rather than of young people.

Dr. R. H. Johnson has joined **Dr. Glenn P. Schmidt** at the Broadway Clinic, Minneapolis. Dr. Johnson was graduated from the University of Nebraska College of Medicine and served his internship at Bronson Memorial Hospital, Kalamazoo, Michigan. He also served three and a half years in the United States Navy Hospital corps during World War II.

* * *

Hector has a new clinic built by **Dr. C. A. Anderson.** It is a modern structure costing $30,000, with four examining rooms, an x-ray room, and also a room for physiotherapy.

* * *

Dr. G. A. Hedberg, hospital superintendent of Nopeming Sanatorium, pointed out the need of fire equipment at Nopeming, at a St. Louis County budget meeting October 21. Not only is there a 1913 fire truck, but "we don't have anyone to run the equipment," he said.

* * *

Dr. Frank Hammond Krusen of the Mayo Clinic, Rochester, was honored for his work in the field of employment for the handicapped persons at a dinner meeting of the Upper Midwest Industrial Health conference held in Minneapolis, October 2. At that same meeting Dr. Leonard A. Scheele, surgeon general of the United States Public Health Service, spoke on "the lack of health service for workers in small establishments." Dr. Scheele said about 99 per cent of American firms employ fewer than 500 persons, and about 70% of all United States employes are in small establishments: "Yet less than 5 per cent of these employes have any type of in-plant or on-the-job health service," he said.

* * *

A Finnish pediatrician, formerly of Helsinki, Finland, and now practicing in Duluth, **Dr. Erkki A. Leppo,** is a former medical officer of the United Nations' World Health Organization. Appointed in 1948, he was one of the first Scandinavian physicians to serve with the UN's WHO, moving to Geneva, Switzerland, at the time the agency was being set up there. Dr. Leppo traveled extensively—he was in Korea when the war broke out in 1950. Following his travels and work with WHO he received a two-year fellowship in pediatrics at the Mayo Clinic. Now he and his family have settled in Duluth, partly because of the area's large Finnish population. He has written a book in Finnish to be published shortly, "UN Doctor Around the World."

* * *

Dr. Morley Cohen and Dr. C. Walton Lillehei of the University of Minnesota, described the "poor man's" heart, a new machine tested successfully on experimental animals, at the opening session of the American College of Surgeons' annual convention held in Chicago in the early part of October.

Do You Have Investment Income?

First Investor: "I feel quite satisfied with my investments—last year I had an average return of about 6%."

Second Investor: "Well, I averaged about 4% with very safe investments, and the income is all mine."

First Investor: "I don't know what you mean—the 6% return is all mine, isn't it?"

Second Investor: "Aren't you forgetting to consider the federal income tax you must pay on your return? Even with this year's taxes your investment income will be under 4%."

First Investor: "What about the income tax on your 4% return?"

Second Investor: "My income tax payments are limited to professional earnings. My investment income is tax-exempt because I buy Municipal Bonds."

JURAN & MOODY, INC.

MUNICIPAL SECURITIES EXCLUSIVELY

TELEPHONES
Garfield 9661
Prior 6423

GROUND FLOOR
93 E. Sixth Street
St. Paul 1, Minnesota

Dr. Charles Steinberg, pediatrician from Saint Paul, gave a lecture on child raising and its problems at the Farmington Woman's Club, November 5.

* * *

Surgeons inducted into the American College of Surgeons at the Medinah Temple in Chicago recently, include the following doctors from Minnesota: **Walter P. Eder, Milton Feinberg, Davitt A. Felder, Geddes B. Flagg, Jr., William H. Ford, Arthur W. Ide, Jr., George L. Garske, John K. Grotting, Carter W. Howell, C. Walton Lillehei** and **Henry A. Norum,** Minneapolis; **Ivan D. Baronofsky,** St. Paul; **Grant Griebie,** Brownton, and **John B. Kirklin** and **Karl A. Lofgren** of Rochester. **Dr. Fred W. Rankin** of Lexington, Kentucky, formerly staff physician at the Mayo Clinic, Rochester, was elected president of the American College of Surgeons at their meeting. The College has grown from a membership of 450 in 1913, the year of its founding, to 19,000 members today.

* * *

Dr. Marie K. Bepko, Cloquet, attending the Pan-American Medical Women's Alliance in New York City in September, discussed the "Common obstetrical emergencies as encountered by general practitioners in a small community."

Dr. H. C. Habein, a senior consultant in internal medicine at the Mayo Clinic, was elected vice president of the Minnesota Society of Internal Medicine during the society's annual meeting held in Saint Paul in October.

* * *

Dr. Norman B. Copeland, of Duluth, has been appointed to direct operations of a government hospital in Amob, Ethiopia. He is going under the auspices of the Baptist General Conference of America.

* * *

Dr. Harry N. L. Simmonds opened his office for practice at Prior Lake in October. Dr. Simmonds, a graduate of University of Minnesota's Medical College practiced medicine in Montana for four years previous to his service in the armed forces. He takes over the practice of **Dr. Paul F. Kortsch** who died last summer.

* * *

Dr. Benedik Melby, Blooming Prairie's pioneer physician and surgeon, was honored by the Steele County Medical Society in the event of his fifty years of practice, at a dinner September 29. Among the guests attending were **Dr. D. K. Halvorson, Dr. J. A. McIntyre, Dr. C. T. McEnaney, Dr. C. W. Lundquist, Dr. Kenneth Henry, Dr. D. H. Dewey, Dr. J. R. Fischer, Dr. J. F. Schaefer, Dr. E. Q. Ertel,** and **Dr. R. J. Wilkowske.**

Cook County Graduate School of Medicine

POSTGRADUATE COURSES

SURGERY—Intensive Course in Surgical Technic, two weeks, starting January 18, February 1, February 15, 1954.
Surgical Technic, Surgical Anatomy and Clinical Surgery, four weeks, starting March 1, 1954.
Surgical Anatomy and Clinical Surgery, two weeks, starting March 15, 1954.
General Surgery, two weeks, starting April 26, 1954.
Surgery of Colon and Rectum, one week, starting March 1, 1954.
Fractures and Traumatic Surgery, two weeks, starting March 1, 1954.

GYNECOLOGY—Intensive Course, two weeks, starting February 15, 1954.
Vaginal Approach to Pelvic Surgery, one week, starting March 1, 1954.

OBSTETRICS—Intensive Course, two weeks, starting March 1, 1954.

MEDICINE—Electrocardiography and Heart Disease, two weeks, starting March 15, 1954.
Gastroscopy, two weeks, starting March 8, 1954.
Two-week Intensive Course starting May 3, 1954.

DIAGNOSTIC X-RAY—Clinical Course every week by appointment.

CYSTOSCOPY—Ten-day practical course starting every two weeks.

UROLOGY—Two-week Intensive Course starting April 19, 1954.

TEACHING FACULTY—ATTENDING STAFF OF COOK COUNTY HOSPITAL

ADDRESS: REGISTRAR, 707 South Wood Street, Chicago 12, Illinois

The Mayo Clinic historical committee members, including **Dr. A. B. Hunt**, chairman; **Dr. D. C. Balfour; Dr. J. R. Eckman; Dr. A. H. Sanford,** and **Dr. J. H. Tillisch,** are acquiring and preserving items of permanent historical value to the Clinic. The items have been named "Mayoana" and consist of photographs, manuscripts, papers, newspaper clippings concerning Clinic events or persons, tape recordings, motion pictures, furniture and instruments, books, reprints, and letters.

* * *

Dr. N. W. Wagner, completing nine years of service with the Oliver Clinic at Graceville, left October 10 to enter a partnership with **Dr. R. P. Griffen** at Benson. Before coming to Graceville, Dr. Wagner, graduate of University of Iowa, was with the U. S. Public Health Service for five years. Dr. G. L. Barnett, now serving with the army, and Dr. Robert Geist, at present studying at the University hospital, will join the Oliver Clinic the first of the year.

* * *

The shortage of doctors in rural areas was discussed at the League of Minnesota Municipalities regional meeting held in Askov, in September. After reading reports of the meeting the eighty-one-year-old **Dr. George E. Sherwood**, Kimball, commented: "We ought to have a law in the state of Minnesota compelling medical graduates to locate in some country place where a physician is needed, for at least one year after their graduation, and hold up their diploma until they did so. They have had such a law in Mexico for several years and it has worked out very well. Many of the doctors who have done so have liked the work and have remained in the place permanently." Dr. Sherwood wants to retire, but is unable to find a doctor to take over his practice.

* * *

Dr. Eugene L. Bauer, Saint Paul, has recently been elected to Associate Fellowship in the American Otorhinologic Society for Plastic Surgery.

* * *

Dr. Owen H. Wangensteen, University surgical chief and president of the Minnesota Medical Foundation, presented fourteen scholarships to medical students October 1, at the University of Minnesota's Medical School. One grant was $750, each of the others were $500.

* * *

Dr. E. E. Novak, who has practiced medicine in New Prague for fifty-eight years, has taken keen interest in cattle breeding during these years. He was president of the Red Poll Cattle Club of America for twenty-one years. Recently he has been honored for distinguished service to the association by the National Red Poll Cattle Club at a banquet held in Topeka, Kansas. Dr. Novak, nearly eighty years old, is a regent of the University of Minnesota, past president of the state school board association, and a founder and director of the Upper Mississippi Valley Breeders association.

Entrance Foyer

Saint Paul's Exclusive

CRESTVIEW
NEUROPSYCHIATRIC
HOSPITAL

New . . Modern . . Complete . .

Providing the highest standard of service at the lowest cost.

- **Occupational therapy and recreational department.**
- **Complete X-ray and laboratory.**
- **Electrocardiography—basal metabolism.**
- **Electroencephalography available.**
- **All patients rooms air-conditioned.**
- **Background music and psychotherapy sound equipment.**
- **Medically staffed by every neurologist and psychiatrist in Saint Paul.**
- **Especially trained nursing staff.**

MEMBER of the American Hospital Association
MEMBER of the Minnesota Hospital Association
APPROVED by the Minnesota State Medical Association and the Ramsey County Medical Society.

CRESTVIEW HOSPITAL • 145 W. College Ave., St. Paul
GArfield 5841
A non-profit organization

Stearns County Cancer Society sponsored a cancer workshop, which was held at St. Cloud, November 13. **Dr. Donald Mosser,** specialist in pathology and radiology at University of Minnesota, spoke on "New Developments in Cancer Research and Treatment." Dr. C. B. Thuringer of St. Cloud also gave a talk during the sessions.

* * *

Dr. Harold Perry, native of Rochester, and **Dr. Frank T. Maher,** formerly of the University of Illinois, have been appointed to the staff of the Mayo Clinic.

* * *

Dr. Berenice Moriarty, Saint Paul specialist in obstetrics and gynecology, recently joined the medical staff of the Minnesota School and Colony as a resident physician. Dr. Moriarty was on the staff of Lying-in Hospital in Chicago for ten years; from 1931 to 1953 she has been in private practice in Saint Paul. One of her main interests during this time has been "Our Lady of Good Counsel" Hospital, a free institution for persons with incurable cancer. She has a sister, **Dr. Cecile Moriarty,** who is a pediatrician in Saint Paul.

* * *

Two Minnesotans, **Dr. William H. Feldman,** Rochester, and **Dr. E. P. K. Fenger,** Glen Lake, were honored recently by tuberculosis workers from twelve mid-western states. Dr. Feldman, research worker at the Mayo Foundation, was awarded the 1953 Dearholt medal of the Mississippi Valley Tuberculosis conference and its medical section, the Mississippi Valley Trudeau Society. Dr. Fenger, assistant medical director of Glen Lake sanatorium, was named Trudeau Society president-elect. He will take office in 1954.

* * *

Dr. Roger L. J. Kennedy, chief of pediatrics at Mayo Clinic, Rochester, was installed as president of the American Academy of Pediatrics at its annual business session at Miami, Florida.

* * *

Dr. W. S. Hitchings, who has practiced medicine for thirty-nine years in Lakefield, has accepted a position on the staff of the Pennhurst State Institution for Mentally Retarded at Spring City, Pennsylvania.

* * *

Dr. Roger Anderson joined the Crystal Medical Clinic staff in September. Dr. Anderson, formerly of Detroit Lakes and Minneapolis, will devote his time to obstetrics and child care.

* * *

Dr. W. L. Benedict, of Rochester, and Dr. Jack C. Copeland, of Chicago, received the Beverly Myers Nelson Achievement Awards at a luncheon at the Palmer House, Chicago, in October. The awards are granted each year to two persons who have rendered outstanding services in the field of optics.

Dr. David P. Anderson, of Austin, succeeds **Dr. C. G. Uhley,** of Crookston, as president of the American Cancer Society's Minnesota division.

* * *

Dr. Donald M. Larson, associated with the Park Region Health Center of Fergus Falls, and Leona Marie Graepp, Alexandria, were married in the American Lutheran Church of Fargo the last part of September.

* * *

Dr. P. W. Backus, of the outpatient department of Nopeming Sanatorium, told his audience in a Christmas Seal drive at Eveleth, that ten years ago the area death rate from tuberculosis was 120 per 100,000, while today it is 7.7 per 100,000.

* * *

Dr. Leo G. Rigler, head of the radiology department at the University of Minnesota, spoke at the University's convocation November 12, on the subject, "India: Masses, Mores and Medicine." Dr. Rigleg, with a fifteen-man team, sponsored by the United Nations World Health Organization and the Unitarian Service Committee, visited India last February.

* * *

Dr. Richard Bardon, Duluth, specialist in internal medicine, was head of the drive in St. Louis County seeking to find undetected cases of diabetes. The drive was sponsored by the St. Louis County Medical Society in co-operation with the American Diabetes Association as a part of a nationwide effort to detect diabetes held November 15 to 21, **Dr. H. O. Hoff,** also of Duluth, assisted Dr. Bardon.

In connection with the drive, **Dr. J. J. Eustermann** headed the work in Blue Earth and Mankato Counties during Diabetes Detection week.

* * *

Dr. P. Theodore Watson, obstetrician and gynecologist in Saint Paul, spoke on "Medical Careers" at the Carleton College Careers Conference, November 18, in Northfield. Both Dr. Watson and his parents are graduates of Carleton. His father was sent by the college to Shansi, China, after his graduation, and there Dr. Watson was born.

* * *

Dr. David T. Carr, Dr. A. M. Olsen, Dr. Donald R. Nichols, and **Dr. William J. Martin,** Rochester, spoke at the Midwest Regional meeting of the American College of Physicians in Milwaukee, November 21. Dr. Carr and Dr. Olsen discussed "Tracheopathia Osteoplastica," and Dr. Nichols and Dr. Martin spoke on "Cryptococcosis: Clinical Features and Differential Diagnosis." Physicians from Minnesota, Wisconsin, Illinois, and Iowa, and Indiana were present at the sessions.

* * *

Dr. Shohei Shirai, Mesaba Clinic, Coleraine, spoke on "Psychiatry in Industry" at a meeting of the Lake Superior Mines Safety Council in Grand Rapids, Michigan, November 12.

* * *

Dr. M. K. Plasha, associated with the Elsey Clinic in Glenwood, left recently to take up a new practice in Coon Rapids.

* * *

Dr. Gunnar Stickler, a fellow in the Mayo Foundation, spoke on "A German's Viewpoint of Germany," at the quarterly meeting of the Magazine Club at Rochester. Dr. Stickler, whose home is in Munich, Germany, spoke of the Nazi regime as a sociological disease, and considered the American occupation good; "the Americans helped the Germans to think and to realize what was happening." He felt that there is too much separation between Germans and Americans still.

* * *

Dr. Winchell McK. Craig, Rochester, president of the Association of Military Surgeons of the United States, recently had a ride in a 600-mile-an-hour jet creft. Dr. Craig was one of seventy leaders of business, labor industry, and profession, who visited the Air Proving Ground Command, Eglin Air Force Base, Florida, in connection with the joint civilian orientation conference sponsored by the Department of Defense.

* * *

Dr. John Wesley Schumacher, Minneapolis, was recently elected to membership in the Minnesota Society of Neurology and Psychiatry.

* * *

Dr. Reuben Berman, Minneapolis, and **Dr. John F. Briggs,** Saint Paul, addressed the Hennepin County chapter of the Academy of General Practice on the subject, "Angina Pectoris and Coronary Insufficiency," at a meeting held September 21.

STOP . . .
BEFORE YOU BUY
YOUR NEW CAR—
SEE US . . .
we can save you money on the finance charge.
©
AMERICAN
NATIONAL
BANK
OF SAINT PAUL
Bremer Arcade Robert at 7th CE 6666
Member Federal Deposit Insurance Corporation

DANIELSON MEDICAL ARTS PHARMACY, INC.
10-14 Arcade, Medical Arts Building
825 Nicollet Avenue—Two Entrances—78 South Ninth Street
MINNEAPOLIS
PHONES:
ATLANTIC 3317
ATLANTIC 3318
HOURS:
WEEK DAYS—8 to 7
SUN. AND HOL.—10 TO 1

ANNOUNCING

The Seventeenth Annual Meeting

of

THE NEW ORLEANS GRADUATE MEDICAL ASSEMBLY

Conference Headquarters — Municipal Auditorium

MARCH 8-11, 1954

GUEST SPEAKERS

Perry P. Volpitto, M.D., Augusta, Ga.—Anesthesiology
Earl D. Osborne, M.D., Buffalo, N. Y.—Dermatology
Julian M. Ruffin, M.D., Durham, N. C.—Gastroenterology
Allan C. Barnes, M.D., Cleveland, Ohio—Gynecology
Walter C. Alvarez, M.D., Chicago, Ill.—Medicine
William D. Stroud, M.D., Philadelphia, Pa.—Medicine
Lawrence C. Kolb, M.D., Rochester, Minn.—Neuropsychiatry
Nicholson J. Eastman, M.D., Baltimore, Md.—Obstetrics
A. D. Ruedemann, M.D., Detroit, Mich.—Ophthalmology
Oscar L. Miller, M.D., Charlotte, N. C.—Orthopedic Surgery
Francis L. Lederer, M.D., Chicago, Ill.—Otolaryngology
Emmerich von Haam, M.D., Columbus, Ohio—Pathology
Philip M. Stimson, M.D., New York, N. Y.—Pediatrics
Ira H. Lockwood, M.D., Kansas City, Mo.—Radiology
Brian Blades, M.D., Washington, D. C.—Surgery
Samuel F. Marshall, M.D., Boston, Mass., Surgery
Orvar Swenson, M.D., Boston, Mass.—Surgery
Charles D. Creevy, M.D., Minneapolis, Minn.—Urology

Lectures, symposia, clinicopathologic conferences, round-table luncheons, three-dimensional surgical motion pictures, medical motion pictures and technical exhibits.

(All-inclusive registration fee—$20.00)

THE POSTCLINICAL TOUR TO HAWAII BY PLANE AND SHIP—MARCH 14-APRIL 6

For information concerning the Assembly meeting and the tour write Secretary, Room 103, 1430 Tulane Ave., New Orleans 12, La.

Dr. E. Sterling Nicol, Miami, Florida, **Dr. Robert L. Parker**, Rochester, and **Dr. John F. Briggs**, Saint Paul, spoke on the "Use of Anticoagulants" at the refresher course of the Minnesota Academy of General Practice, November 4.

* * *

Dr. James Seifert, New Ulm, gave a talk on the role of teeth in childbirth at a prospective parents class at the Loretto Hospital, New Ulm, September 22.

* * *

Dr. Frank J. Lexa, Lonsdale, was honored by fellow members of the Rice County Medical Society, at a meeting held at the State School and Colony, September 22, in recognition of his fifty years of active medical practice. He was also recently presented a certificate by the Minnesota Medical Association for his years of service. **Dr. F. R. Huxley**, Faribault, and **Dr. Niel S. Dungay**, Northfield, have also been given this recognition recently.

* * *

Dr. Theodor M. Vitols, Latvian medical professor and surgeon who came to this country as a refugee, was recently honored on his fiftieth birthday by the Latvian Evangelical Lutheran Church in Minneapolis. He is now affiliated with the Oxboro Clinic and is staff member of several hospitals in Minneapolis.

* * *

Dr. H. Herman Young, Rochester, with Chief Highway Patrol Officer Carl Larimer, warned of farm and highway accidents occurring during the fall, at a accident prevention clinic sponsored by the Martin County Extension Service at Fairmont October 1. Dr. Young emphasized the danger of careless handling of farm machines, especially the corn pickers.

* * *

At a regional meeting of the Women's Auxiliary to the State Medical Society in Detroit Lakes, **Dr. E. P. Tuohy**, Duluth, spoke on "How to Grow Old Gracefully," **Dr. John Freeman**, Fergus Falls, explained that 38 per cent of admissions to mental hospitals are over sixty years old, that there are twice as many mental hospitals today as ten years ago, and that 51 per cent of all hospital beds in the United States are used for mental patients. **Dr. R. Blanchard** gave a talk on tuberculosis.

* * *

Dr. John Paul Street, resident at Ancker Hospital, St. Paul, and Charlotte Marie Aust, teacher in Minneapolis schools, were married October 10 at Madison, Wisconsin. Dr. Street is a graduate of the University of Minnesota School of Medicine.

* * *

Olmstead County has recently named a county board of health, of five members, **Dr. A. F. Risser**, Stewartville among them. **Dr. Viktor O. Wilson**, city-county health officer, called a meeting to organize the board in order that it might take up its new duties.

Dr. Louis A. Loes, specialist in obstetrics and gynecology, has opened an office in St. Cloud. A veteran of World War II, Dr. Loes was recalled to active duty in 1951, and has recently been discharged. He is a graduate of Iowa State University Medical school.

* * *

Dr. Frank J. Heck was elected president of the staff of Mayo Clinic, November 16. Other officers elected were **Dr. Charles H. Watkins,** vice president; **Dr. David G. Pugh,** secretary; **Dr. Lee M. Eaton,** first counsellor, and **Dr. Mark J. Anderson,** second counsellor. Four retiring members of the voting staff were honored. They are **Dr. Frederick A. Willius, Dr. B. R. Kirklin, Dr. Harold I. Lillie,** and **Dr. Paul L. Tarara.**

* * *

Dr. Irving C. Bernstein, of Minneapolis, presented a paper on "The Psychiatric Aspects of Tuberculosis," at the fortieth annual conference of the Mississippi Valley Trudeau Society, held on October 16 at Nicollet Hotel, Minneapolis.

* * *

"Clinic Day" was held October 14 at the Fort Snelling Veterans Administration Hospital in connection with the opening of the new $6,300,000, 480-bed unit. Physicians from Minnesota, western Wisconsin and northern Iowa attended. **Dr. O. T. Clagett,** chief of the thoracic surgical section of the Mayo Clinic, Rochester, spoke on "Anatomical Variations and Pathologic Changes in Coarctation of the Aorta."

* * *

Dr. Frank H. Krusen, professor of physical medicine and rehabilitation with University of Minnesota May Foundation, has been selected to receive the second annual physician's award of the President's Committee on Employment of the Physically Handicapped.

Presentation of the award will be in February by Vice Admiral Ross T. McIntire, during the annual meeting of the Congress on Industrial Health to be held in Louisville, Kentucky.

* * *

Dr. Alexander Josewich, chief of chest follow-up at Minneapolis Veterans hospital, spoke of the high incidence of tuberculosis among servicemen at the short course for TB workers held at the Center for Continuation Study, October 13. Dr. Josewich said there were at present 2,300 veterans in Minnesota who contracted tuberculosis during their time in service. Few cases develop in camps in this country, "but in combat areas, unusual exposure to tuberculous civilians and other conditions results in unusually high incidence," he said.

* * *

Dr. Frank C. Mann, Rochester, was made an Honorary Fellow of the American College of Surgeons, October 9, 1953, in Chicago. The following citation was read by **Dr. O. H. Wangensteen** on this occasion:

> Mr. President: I have the honor to present for Honorary Fellowship in the American College of Surgeons, Frank Charles Mann, product of the schools of the Commonwealth of Indiana, illustrious citizen of the State of Minnesota, distinguished Professor Emeritus of the Graduate School of the Mayo Foundation and the University of Minnesota, keen exponent of the experimental method in surgery, and brilliant innovator of many imaginative experimental surgical techniques, which have proved useful in unraveling the complexities of organ function and disease processes.
>
> The surgical profession of the United States and Canada, on the recommendation of the Regents of the American College of Surgeons, honors you, Doctor Mann, for many significant contributions to

ARTIFICIAL LIMBS
ORTHOPEDIC APPLIANCES
TRUSSES
SUPPORTERS
ELASTIC HOSIERY

FREJKA
Abduction Pillow Splint
by the
Original Maker

For displasia of the hip in the newborn and in early postnatal life (as described by Dr. V. L. Hart, Journal of Bone and Joint Surgery, Vol. 31-A, pp 357-372, April, 1949).

Prompt, painstaking service

BUCHSTEIN-MEDCALF CO.
223 So. 6th Street Minneapolis 2, Minn.

RADIUM RENTAL SERVICE
4340 CEDARWOOD ROAD
MINNEAPOLIS 5, MINNESOTA
TEL. ATLANTIC 5297

Radium element prepared in type of applicator requested

ORDER BY TELEPHONE OR MAIL
PRICES ON REQUEST

Ulmer
PHARMACAL COMPANY
1400 Harmon Place
Minneapolis 3, Minnesota

Ethical Pharmaceutical Specialties
ULVICAL . . . P-B-SAL-C . . . HEMATOVALS
ALPRINE . . . CALZO . . . DALIKAPS
INJECTABLES . . . OINTMENTS

the growth of medical knowledge which have won for you the respect and admiration of medical men throughout the world. The Regents bestow this mark of esteem upon you with a sense of great pride in your important labors and in a spirit of grateful thanksgiving, mindful that your work has advanced the art and the science of surgery and has been the means of bringing comfort and relief to a large number of sufferers from many bodily ills which beset mankind. The force of your example has captured the imagination of a large number of fellow students who have had the opportunity, at first hand, to observe your spirit of dedicated devotion to your tasks. This precept and your encouragement have implanted in many of them the zeal to devote their lives to the advancement of knowledge and the betterment of man's health. Through them your influence will be extended on the pages of medical history down the corridors of time.

For these important services to your fellow man, the Regents of the College cite you for Honorary Fellowship in the American College of Surgeons.

MINNESOTA BLUE CROSS-BLUE SHIELD

During October, a statement was made by an out-state doctor that payment of Blue Shield claims was not received by him for a period as long as six weeks or two months after the claim was submitted. Since such statements are very infrequently heard now and are contrary to established routine Blue Shield claims processing procedures, a thorough investigation of the time involved in payment of various types of Blue Shield claims was made.

This analysis revealed that there are, in general, two types of Blue Shield claims. First of these types is the routine one in which all information necessary for proper payment is provided originally in the Medical Service Report. On the basis of the figures investigated, it was found that of claims received, 97 per cent fall into this first category and are processed for payment without delay. The second general classification of Blue Shield claims consists of those in which all information necessary for their correct payment or disposition is not included originally in the Medical Service Report. Claims falling into this classification represent approximately three per cent of the total claims received.

Claims of the first type are routinely processed. This means that the report is coded with the subscriber's contract information and then acted upon by a Claims Examiner. These procedures are accomplished in not more than four days. The claim then leaves the Claims Department for auditing and the various machine recordings necessary for statistical records. After these processes, all the claims submitted by each doctor are segregated, and the checks are then actually calculated and printed by machine. The claims and the checks are then returned to the Blue Shield Claims Department for mailing. These procedures take from one week to ten days, since two days of the week are not work days. Thus, then, claims containing all needed information are paid within a total period of ten days or two weeks of their receipt by Blue Shield.

The second type of claims, those not containing sufficient information to be processed routinely, can be further classified into the following sub-groups: (1) Pre-existing conditions, (2) related services, (3) miscellaneous, (4) "look-ups," (5) "paid-to-dates." The present analysis has disclosed that a total of 567 claims were involved in these five categories on October 30, 1953.

HELP FOR
PROBLEM DRINKERS

Hazelden Foundation (non-profit) is dedicated to the treatment of problem drinking through research, education, and rehabilitation. It has ideal facilities on Lake Chisago near Center City, Minn. Your inspection is invited at any time.

HAZELDEN FOUNDATION

Let us send you complete information

A NON-PROFIT ORGANIZATION

2639 University Avenue **St. Paul 14, Minnesota**
24-hour service **Phone NEstor 5958**

Cases involving a condition which may pre-exist the effective date of the subscriber's contract require correspondence to obtain the history, unless it is furnished in the Medical Service Report. Some claims require two or three inquiries directed to subscribers or doctors before the needed information is received. There were 157 such claims, the oldest dating back three to four weeks. Related service claims as listed are those for anesthesia, x-rays, or endoscopy with which no claim has been received from the attending physician who rendered the basic medical, surgical or obstetrical service. In such instances, the claim for anesthesia, x-ray or endoscopy cannot be processed until the basic service claim is received since the Blue Shield contract does not provide benefits for related service unless it is a part of an otherwise eligible basic service. There were 172 of these claims covering a period of four to six weeks. The miscellaneous classification includes essential information, such as the birth date of the subscriber, Workmen's Compensation data, the number of sutures in laceration cases, the date of service, the diagnosis or description of services, and whether or not x-rays were taken in the hospital or in the doctor's office. Of 104 such claims, the delay in payment was as long as four weeks.

"Look-ups" refer to those cases involving a subscriber

Hall, Anderson & Nordehn

PRESCRIPTION PHARMACY
BIOLOGICALS
PHYSICIANS' SUPPLIES
SAINT PAUL, MINN.
LOWRY MEDICAL ARTS BUILDING
TELEPHONE: CEDAR 2735

Help Fight TB

Greetings
1953
©NTA
USA

Buy Christmas Seals

Help Fight TB

Greetings
1953
©NTA
USA

Buy Christmas Seals

Distributors to the profession

of fine

Injectable Vitamins and Endocrines

Interstate Pharmacal Company

P.O. Box 252 Beloit, Wis.

MAIL ORDERS SHIPPED IMMEDIATELY

who is in the process of changing his contract in some manner so that the record must be "looked up" to secure the information needed. In such instances, contract information is often not available for several weeks, pending the receipt of payment, or correspondence. There were forty-seven claims. The "paid-to-dates" are very closely related to "look-ups," but specifically require determination of whether or not the subscriber's premium was paid to the date of service. A series of notifications sent the delinquent contract holders involves a thirty-day period before the contract is cancelled. There were eighty-seven claims of this type.

To summarize, it can be seen from the present analysis that the one factor most vital to the rapid processing of Blue Shield claims is that of getting complete information into the file when the claim is first received. The first three groups of claims which cannot be routinely processed because of insufficient information represent situations where the doctors and their staffs can be of material assistance in reducing or eliminating delay. Greater accuracy and detail in the original completion of the Medical Service Report will result in more rapid clearing of Blue Shield claims and greater satisfaction to both the public and the doctors.

During the month of September 11,707 participant subscribers were enrolled in Blue Cross, bringing the total enrollment as of September 30, 1953 to 978,918.

During the month of September 9,856 participant subscribers were enrolled in Blue Shield, bringing the net enrollment as of September 30, 1953, to a total of 593,294 Blue Shield participant subscribers.

As of September 30, a total of $11,102,222 has been paid to hospitals this year for services rendered to Blue Cross subscribers, and a total of $3,208,005 has been paid to doctors to date this year for the care of Blue Shield subscribers.

WMA TO MEET IN ROME

The World Medical Association will hold its 1954 meeting in Rome, September 26 to October 2. Since 1954 is a Holy Year, there will be heavy demands for transportation and hotel reservations. Any AMA member who wishes to attend this meeting should write to the World Medical Association, 345 East 46th Street, New York 17, as soon as possible. The WMA will secure transportation, hotel reservations, and help plan any side tours of Europe which the member desires. No charge is made to the physician for this service.

PATTERSON SURGICAL SUPPLY COMPANY
130 W. Seventh Street, St. Paul 2, Minn.
HOSPITAL AND PHYSICIANS SUPPLIES AND EQUIPMENT
Cedar 1781-82-83

Insurance at a Saving
Druggists' Mutual Insurance Company
OF IOWA, ALGONA, IOWA
Fire - Tornado - Automobile Insurance
Prompt Loss Service
MINNESOTA REPRESENTATIVE—S. E. STRUBLE, WYOMING, MINN.

BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical Libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

BOOKS RECEIVED FOR REVIEW

DISEASES OF WOMEN. Tenth Edition. Robert James Crossen, A.B., M.D., F.A.C.S. Assistant Professor of Clinical Gynecology and Obstetrics, Washington University School of Medicine; Section Head of Unit, Obstetrics and Gynecology, St. Louis City Hospital; Assistant Gynecologist and Obstetrician to Barnes Hospital and St. Louis Maternity Hospital; Assistant Gynecologist to St. Louis Children's Hospital; Gynecologist and Obstetrician to St. Luke's Hospital; Member of American Academy of Obstetrics and Gynecology, Central Association of Obstetricians and Gynecologists, American Radium Society, American Society for the Study of Sterility, International Fertility Association; Diplomate of the American Board of Obstetricians and Gynecology. 935 pages. Illus. Price $18.50, cloth. St. Louis: C. V. Mosby Co., 1953.

PLANNING GUIDE FOR RADIOLOGIC INSTALLATIONS. Wendell G. Scott, M.D. Chairman, Committee on Planning of Radiologic Installations of the Commission on Public Relations of the American College of Radiology. 336 pages. Illus. Price $8.00, cloth. Chicago: Year Book Publishers, 1953.

SPATIAL VECTORCARDIOGRAPHY. George E. Burch, M.D., F.A.C.P. Henderson Professor of Medicine, Tulane University School of Medicine; Physician-in-Chief Tulane Unit, Charity Hospital of Louisiana at New Orleans; Consultant in Cardiovascular Diseases, Ochsner Clinic; Visiting Physician, Touro Infirmary, New Orleans; J. A. Abildskov, M.E., Instructor in Medicine, Tulane University School of Medicine; Assistant Visiting Physician, Tulane Unit, Charity Hospital of Louisiana at New Orleans; and James A. Cronvich, M.S., Professor of Electrical Engineering, Tulane University College of Engineering, New Orleans. 173 pages. Illus. Price $5.00, cloth. Philadelphia: Lea & Febiger, 1953.

DERMAPAPILOSCOPIA CLINICA. 2 Vols. Israel Castellanos. Prologue by Leonidio Ribeiro. Vol. 1, 221 pages; Vol. 2, 291 pages. Havana, Cuba: P. Fernández y Cia., 1953.

SURGICAL PATHOLOGY. Lauren V. Ackerman, M.D., Professor of Surgical Pathology, Washington University, School of Medicine, Surgical Pathologist, Barnes Hospital and Affiliated Hospitals, St. Louis; Consultant to the Ellis Fischel State Cancer Hospital, Columbia, Missouri; Consultant to the Armed Forces Institute of Pathology. 836 pages. Illus. Price $14.50, cloth. St. Louis: C. V. Mosby Co., 1953.

An excellent book by a prominent and experienced pathologist, "Surgical Pathology" is entirely new and in no way duplicates the previous book by Ackerman and Regato, published in 1947, entitled "Cancer, Diagnosis, Prognosis and Treatment."

This text is not meant to be a complete treatise on all of surgical pathology, but rather a brief summary of pertinent features of the more common entities encountered in a large general hospital. It includes surgical pathology of the entire body and thereby adequately covers the special interests of gynecology, urology, orthopedics, dermatology, neurosurgery and plastic surgery, as well as general and thoracic surgery. Any incompleteness of content is ameliorated by an up-to-date, readily available list of references that the interested reader can use for more detailed information.

Whenever possible, the author draws richly from his own experience and resolves controversial matters from his own fund of knowledge. Only important disputable issues are recorded. Because of this, the book is very readable, and the physician is quickly able to grasp and retain important information.

The author is progressive and up to date in his views on *in situ* cancer. The discussions of tumor pathology in general are excellent and it might be said that this indeed is the book's major contribution. In most instances, there are good, clinically useful classifications of disease; the one possible exception being that for thyroid neoplasms. The chapter on salivary glands was particularly well presented and indicates some clarification of benign and malignant tumors of these glands.

Gross and microscopic illustrations are very well chosen. Photomicrographs are exceptionally clear, rendering a useful "refresher" to the occasional microscopist and student. There are separate sections, in each chapter where indicated, devoted to frozen section, biopsy and exfoliative cytology. Here he clearly points

The completely new . . .

A
B
C
D
E
ALL AMERICAN*
athletic glasses
designed for rough treatment

A. EXTRA STURDY ALL-METAL FRAME
B. "CUSHION FIT" SHOCK ABSORBENT RUBBER NOSE PIECE
C. ENDS COVERED TO PROTECT OTHER PLAYERS
D. SAFETY PRESCRIPTION LENSES WITH HIGH BASE CURVE
E. EXPANSIBLE, ADJUSTABLE "GLASS GARD"* HEADBAND

- One Price for All Prescriptions up to and Including 7 Diopters—Case Included
- Order Complete Sample Available at Nominal Cost or Write for Further Information

*Pat. Pend.

Since 1913 Benson OPTICAL COMPANY EXECUTIVE OFFICES
MINNEAPOLIS, MINNESOTA

Complete Laboratories in Minneapolis and Principal Cities of Upper Midwest

out the value, accuracy and limitations of these procedures. He also indicates the surgeon's responsibility to the pathologist in securing a representative and adequate specimen; for example, in proving the diagnosis of carcinoma of the pancreas. The problems and limitations of lymph node diagnosis are frankly admitted.

The author expresses his opinion of justification, or not, for a radical surgical procedure as based upon pathologic diagnosis and follow-up results. This text should be useful to the surgeon, pathologist, radiologist and medical student because it stresses gross and microscopic pathology in relationship to clinical observations. I recommend it highly.

Kenneth A. Storsteen, M.D.

OPERATIVE SURGERY. By Guy W. Horsley, B.S., M.D., F.A.C.S., Associate Professor of Surgery, Medical College of Virginia, Attending Surgeon, St. Elizabeth's Hospital, Richmond, Va.; and Isaac A. Bigger, M.D., F.A.C.S., Professor of Surgery, Medical College of Virginia, Surgeon-in-Chief, Medical College of Virginia Hospitals, Richmond, Va. 6th ed. 2 vols. Illus. Price $30.00. St. Louis: C. V. Mosby Co., 1953.

This is the first revision in thirteen years of a textbook of operative surgery which has long been recognized as one of the leading books of its kind.

There has been a complete revision of the text and the illustrations, but the book has retained its former style which made it so popular. Many new contributors have assisted in putting together the two volumes.

One of the valuable features of this text is the fact that it includes the more important operative procedures not only of what is now termed as general surgery, but also of the field of orthopedics, vascular surgery, thoracic surgery, urology, gynecology, proctology, plastic surgery and neurosurgery. The section on congenital and acquired cardiac disease is strictly up to date and is very well presented. The new chapters on thoracic surgery contain excellent descriptions of pulmonary resection, not only for tumors, but the use of resectional surgery in tuberculosis.

There is an entirely new section dealing with hernia, reflecting the great changes which have taken place in surgery since 1940. In reality, little of the old editions can be found, save some of the illustrations. This edition contains 1,274 illustrations of very good quality which are well integrated with the text. A few minor errors have crept into the book, but in general these are not important, the most glaring of these is the recommendation of enteroenterostomy with Polya gastrectomy where there is any torsion of the loops. The danger of stoma ulceration when this is carried out is not adequately emphasized.

This text is one which has a place in every good surgical library.

Frederick M. Owens, Jr., M.D.

THE PEOPLE'S HEALTH: A HISTORY OF PUBLIC HEALTH IN MINNESOTA TO 1948. By Philip D. Jordan. 524 pages. Illus. Price $5.00. St. Paul: Minnesota Historical Society, 1953.

The people's health is an outstanding achievement in the history of Minnesota medicine. Dr. Jordan has been able to place successfully on paper the significant story of our state and local health departments, a story of remarkable achievement by our pioneer physicians. With the perspective of the historian, he has been able to evaluate the personalities, the feuds and the vendetta that existed in the development of the department. In a most charming manner, he develops the personalities of our health department officials and brings to light the many contributions played by organized medicine and private practitioners to better the welfare of our state.

To go into detail concerning the various chapters of this work would steal from the reader the pleasure he will find in reading this volume.

Although many people are mentioned in the course of this essay, I am intrigued by the influence of Justus Ohage, Sr., in the development of the St. Paul Health Department, a heritage well borne by his son, Doctor Ohage, Jr., and the ubiquitous Doctors Ulrich and Tuohy whose images are reflected in every facet of our local medical history.

Doctor Jordan is to be congratulated on the completion of his arduous task, particularly for the charming manner in which he relates this story.

John F. Briggs, M.D.

DEFENSE SPENDING

A survey by the National Science Foundation shows that more than three-fourths of all federal money for scientific research and development is spent by the Department of Defense. Included in the total is the cost of medical research and development, but not the cost of such programs as medical care and hospital construction. The Department of Health, Education, and Welfare, which directs most U. S. medical research, ranks fifth on the spending list. It spent $67 million last fiscal year, but expects to cut back to $63 million the current fiscal year. NSF gives this year's estimated total for all agencies and departments as $2,187 million, compared with $2,205 million spent last fiscal year.

P&H ®
A Complete Service
FOR THE MEDICAL AND HOSPITAL PROFESSION
Physicians & Hospitals Supply Company, Inc.
1400 Harmon Place • Minneapolis 15, Minnesota

The Birches Sanitarium, Inc.

2391 Woodland Avenue
Duluth 3, Minnesota

A hospital for the care and treatment of Nervous and Mental disorders. Quiet, cheerful environment. Specially trained personnel. Recreational and occupational therapy.

Dr. L. R. Gowan, M.D., M.S., Medical Director

Index to Advertisers

Abbott Laboratories 1216, 1217, 1223
Aloe, A. S., Co. 1280
American National Bank 1292
Ames Co., Inc. 1210
Anderson, C. F., Co., Inc. 1222
Ayerst, McKenna & Harrison, Ltd. 1212

Benson Optical Co. 1297
Bilhuber-Knoll Corporation 1281
Birches Sanitarium 1299
Brown & Day, Inc. 1215
Buchstein-Medcalf Co. 1294

Camel Cigarettes 1219
Canfield, C. R., & Co. 1208
Caswell-Ross Agency 1202
Chicago Medical Society 1278
Classified Advertising 1300
Coca-Cola Co. 1222
Cook County Graduate School of Medicine 1290
Cordelia of Hollywood 1277
Crestview Hospital 1291

Dahl, Joseph E., Co. 1284
Danielson Medical Arts Pharmacy, Inc. 1292
Druggists Mutual Insurance Co. 1296

Eaton Laboratories, Inc. 1220, 1221
Ewald Bros. .... Inside Back Cover

Glenwood Hills Hospitals 1309

Hall, Anderson & Nordehn 1296
Hazelden Foundation 1295
Homewood Hospital 1286

Interstate Pharmacal Co. 1296

Juran & Moody, Inc. 1289

Lilly, Eli, & Co. .... Front Cover, 1224
Lederle Laboratories .... Facing page 1208

Mead Johnson & Co. 1310
Medical Protective Co. 1284
Merck & Co., Inc. 1205
Milwaukee Sanitarium .... Back Cover
Mounds Park Hospital .... Back Cover

New Orleans Graduate Medical Assembly 1293
North Shore Health Resort 1279

Parke, Davis & o. .... Inside Front Cover, 1201
Patterson Surgical Supply Co. 1296
Pfizer Laboratories, Division of Chas. Pfizer & Co., Inc. 1213
Physicians Casualty Association 1283
Physicians & Hospitals Supply Co. 1206, 1298
Professional Credit Protective Bureau 1211

Q-Test 1287

Radium Rental Service 1294

St. Croixdale Sanitarium 1204
Searle, G. D., & Co. 1275
Sheltering Arms 1287
Squibb 1214

Ulmer Pharmacal Co. 1294
United Fruit Co. 1207, 1208
Upjohn 1209

Winthrop-Stearns, Inc. 1218

Classified Advertising

Replies to advertisements with key numbers should be mailed in care of MINNESOTA MEDICINE, *2642 University Avenue, Saint Paul 14, Minn.*

RADIOLOGIST—Diplomate American Board in Radiology, thirty-one years old, Priority IV, Member ACR, desires association with hospital, individual or group. Address E-381, care MINNESOTA MEDICINE.

FOR RENT—Attractive doctor's suite in south Minneapolis. Wonderful location for a practice to be built up, or as an outlying office for a downtown doctor. Write Wm. L. Cochrane, 7301 Fremont Avenue South, Minneapolis 19, Minnesota. Telephone RO 9-8758.

FOR SALE—General practice, established thirty-five years in small town 35 miles from Minneapolis. Farming community. Also office space—five rooms and drug room completely equipped. Reasonable terms. Address E-391, care MINNESOTA MEDICINE.

WANTED—Physician for locum-tenens—one or more months. Address E-388, care MINNESOTA MEDICINE.

WANTED—General Practitioner. for obstetrics, internal and industrial medicine, and pediatrics. Associated with nine-man group in Northern Minnesota servicing four towns. Would practice in new building under construction with laboratory and x-ray facilities. City of 8,000 with trade area of 60,000. Two fine hospitals within ten miles. $10,000 starting with opportunity for partnership. Address E-389, care MINNESOTA MEDICINE.

PRACTICE FOR SALE—Retiring, will sell for inventory of equipment. Plan on leaving for California by January 1, 1954. In same location for twenty-one years, located half block from Medical Arts Building, Duluth. Address E-392, care MINNESOTA MEDICINE.

WANTED—A general practitioner for Fergus Falls State Hospital. Beginning salary $626.00 per month. Three bedroom house available, partially furnished, subsistence, garage. Government working conditions, paid holidays, vacation, sick leave and retirement pension plan. Address inquiries to W. L. Patterson, M.D., Superintendent Fergus Falls State Hospital, Fergus Falls, Minnesota.

AVAILABLE FOR LOCUM TENENS WORK—Well-qualified General Practitioner. Used to busy general practice including surgery. Available for any time period after January, 1954. In answering, state kind of practice and remuneration offered. Address E-393, care MINNESOTA MEDICINE.

PLACEMENT SERVICE

The Minnesota State Medical Association maintains a Medical Placement Service for the benefit of physicians who are looking for locations and positions; also for communities, medical groups and physicians who are looking for licensed medical assistance. For information, write to the Minnesota State Medical Association, 496 Lowry Medical Arts Bldg., Saint Paul 2, Minnesota.

FOR RENT—Doctor's office, northeast corner building, University Avenue and Dale Street. Busy intersection. Inquire 490 North Dale Street, Saint Paul, Minnesota.

FOR SALE OR LEASE—Modern, well-equipped clinic in prosperous farming community of 2,300 located in central Minnesota. Must be disposed of by January 15. Very large lucrative practice. New hospital in community. Reasonable selling price and easy, long-term payments. Reason for sale—specializing. Address E-394, care MINNESOTA MEDICINE.

RADIOLOGY LOCUM TENENS WANTED—Third-year resident desires two- or three-week radiology locum tenens during January, February or March. Again in May or June. Address E-395, care MINNESOTA MEDICINE.

WANTED—General practitioner to join five-man clinic caring for a mining company's employes and families. Includes general practice, obstetrics, surgery and industrial work. Good salary, all equipment and car furnished. Living conditions and schools excellent. Location—Black Hills. Immediate opening. Address E-396, care MINNESOTA MEDICINE.

WANTED—Full or part-time assistant or locum tenens with possibility of taking over entire practice later. Town of 1600 with 50-bed hospital, 28 miles west of Minneapolis. For information, write H. D. Nagel, M.D,. Waconia, Minnesota.

DESIRABLE SPACE AVAILABLE—For M.D.'s or EENT's in Saint Cloud, Minnesota, medical building with all utilities. Good openings. James H. Murphy, 203 St. Mary's Building, Saint Cloud, Minnesota.

WANTED—General Practitioner to take over well-established suburban practice near Twin Cities, with full equipment. Good opportunity for energetic man. Address E-392, care MINNESOTA MEDICINE.

UNIVERSITY OF CALIFORNIA
Medical Center Library

THIS BOOK IS DUE ON THE LAST DATE STAMPED BELOW

Books not returned on time are subject to a fine of 50c per volume after the third day overdue, increasing to $1.00 per volume after the sixth day. Books not in demand may be renewed if application is made before expiration of loan period.

~~AUG 23 1954~~
~~AUG 28 1954~~
~~SEP 3 1954~~
JAN 27 1955
~~MAY 14 1955~~
OCT 11 1955
~~FEB 10 1956~~
~~JUN 4 1956~~
~~AUG 9 1956~~
~~AUG 20 1956~~
7 DAY
~~NOV 7 1956~~

7 DAY
~~DEC 13 1956~~
7 DAY
FEB 9 - 1957
7
7 DAY
RETURNE
~~JUN 12 1958~~
JUN 23 195
7 DAY
RETURNED
~~OCT 31 1962~~ 30
OCT 31 1962

7 DAY
MAY 4 - 1964
RETURNED
MAY 11 1964
7 DAY
RETURNED
DEC 27 1964
RETURNED
DEC 21 1964
7 DAY
MAY 24 1965
RETURNED
MAY 19 1965
7 DAY
1972

5m-7,'52(A2508s2)4128

92140